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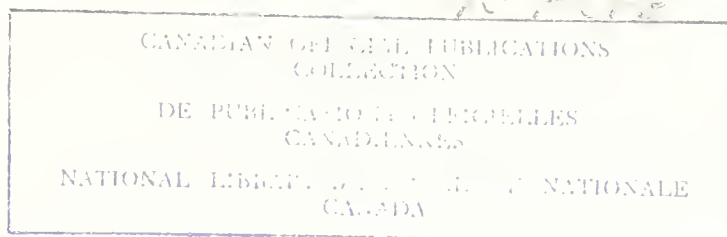
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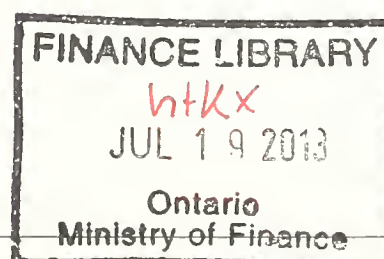
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This issue of *Aspects* represents a departure from our usual format. Most of our regular features — Data Base, the question and answer column with Mr. P. G. Gillis, and the regional office story — remain intact. However, the bulk of the space is taken up by a Special Report on neighbourhood assessment in Ontario. This report contains a preface, three separate articles, numerous diagrams, and a bibliography. It is the culmination of five years of work by Assessment Standards Branch and regional office staff.

Basically, neighbourhood assessment is a logical extension of the "geographics" concept. The research team studied the neighbourhood concept in terms of both organization and valuation; one article describes the results of a feasibility study of neighbourhood assessment in Ontario, and another outlines a manual graphical method of valuation that could be used within a neighbourhood framework. Once the preliminary work was done, the team carried out a test reassessment of three neighbourhoods — two urban and one rural — in the Durham region. The results are reported in the third article.

We believe that this report and all its potential implications for the future will be of great interest to *Aspects* readers, and particularly to Ontario assessors. We also believe it is sufficiently important to justify setting aside the rest of the articles for this issue until *Aspects* #20. Hopefully you will agree. We welcome your comments on the ideas outlined in the report, and would be happy to pass them on to the research team.

In *Aspects* #20 we will return to our usual variety of articles; also, we will inaugurate the new real estate section. Submissions are always welcome. ☐

DATA BASE

There have been several new appointments of assessment commissioners recently. Following the resignation of Mr. G. A. Middaugh, Mr. G. H. Meredith replaced him as commissioner for Ottawa-Carleton. Mr. B. G. Eastwood went from Goderich to the Niagara office in St. Catharines, and Mr. F. W. Jenkins has been appointed commissioner in Huron-Perth.

* * *

Due to scheduling problems caused by the approaching reassessment deadlines, the method of presenting the Assessment Appeals Training Course has been changed. The course will no longer be offered on an individual regional office basis. Instead, the program will be held for one week in each of five locations around the province, and for two weeks in Toronto. Each commissioner will be permitted to send approximately twelve assessors to the nearest location. The locations and dates are as follows:

TORONTO (Queen's Park): April 12-13 and 14-15
KINGSTON: May 18-19 and 20-21
LONDON: June 14-15 and 16-17
SUDBURY: July 13-14 and 15-16
OTTAWA: August 16-17 and 18-19
HAMILTON: September 13-14 and 15-16
TORONTO (Queen's Park): October 18-19 and 20-21

* * *

Career Development Workshops are continuing for women clerical and office services employees in the Ministry of Revenue. The workshops are a joint venture of the Equal Opportunity Program and the Personnel Branch. Since the spring of 1975, there have been nine workshops with about 175 women participating.

The workshops deal with various topics, including the status of women, sex-role stereotyping at home and on the job, career planning, and the barriers to career advancement for women. Interested women nominate themselves; each branch sends its list of nominees, in order of priority, to Personnel, which selects approximately 20 participants for each workshop. Nomination forms are available from managers and the Equal Opportunity representative in every office.

So far, demand for the workshops has exceeded expectations. At the moment there are 103 candidates on the waiting list. For this reason, no further nominations are being accepted for the next two workshops, scheduled for May 5-7 and June 2-4. It is expected that nominations will open again for the autumn sessions. The workshops will continue until the demand is exhausted.

Interested women can obtain further information from their Affirmative Action representatives or from the Equal Opportunity Program office in Toronto.

* * *

The Fund for Employee Educational Development (F.E.E.D.) came into existence on April 1, 1976. Intended as a supplement to existing Ministry funds for subsidization of courses taken by employees, the F.E.E.D. program will be available to *all* employees, regardless of position. First priority will be given to those who normally would not be eligible for reimbursement. Courses taken need not be job-related, but should be work-oriented rather than leisure-oriented. Reimbursement will be a flat 50% of tuition fees.

For further information, see the article on the Equal Opportunity Conference in this issue, or contact the Affirmative Action representative in your office. ☐

Special Report

NEIGHBORHOOD ASSESSMENT IN ONTARIO

"Equity is a roguish thing: for law we have a measure, know what to trust to; equity is according to the conscience of him that is chancellor, and as that is larger or narrower, so is equity."

John Seldon
Table Talk

Assessment Standards Branch Research Program:

RESIDENTIAL VALUATION

Preface

This issue of *Aspects* presents three articles under the general heading "Neighbourhood Assessment." They are the culmination of five years of research by the Assessment Standards Branch in the application of the market data approach to property tax assessment. Although the results of this research program cover more ground than can be described in these articles — particularly the work connected with computer systems and statistical methods — the material presented here is a synthesis of the research findings which we feel have the greatest immediacy for assessment in Ontario.

The first paper describes a new set of procedures which have been developed in Ontario for the market data approach. This methodology is noteworthy because, contrary to contemporary trends in assessment practice, it employs standard methods of analysis and therefore does not depend on any special knowledge of statistical techniques such as multiple regression analysis; in addition, it provides a general procedural framework for all kinds of properties such that the only restriction on the scope of application is, quite reasonably, whether or not there is a market for the property in question.

The technical vehicle for the method is graphical analysis, something which has had a long-established role in Ontario assessment practice — primarily for developing local modifiers and depreciation tables for the cost approach. As a result, the principal advantage of graphical analysis is its familiarity and relative ease of application; at the same time, current evidence suggests that it is as accurate, if not more so, than more complicated statistical techniques, particularly if intelligent and persistent application is combined with a sound knowledge of neighbourhood market conditions.

The second paper develops the concept of what has become known as "neighbourhood assessment". This concept is a direct organizational response to the imperatives of the market data approach — familiarity with local market

conditions — and the general organizational plan of the Ontario Assessment Division, "geographics". In fact, most assessment regions in Ontario have already started to move toward some form of geographic organization by allocating work assignments on a geographic basis. Nevertheless, the reassessment program which began in 1970 has had to focus on a consolidation of the data base — the preparation of a complete set of physical property descriptions for the province — and as a result has involved very little meaningful appraisal work. Consequently, when the data base is ready, the future organization must accommodate not only a change in the method of allocating work, but also a more fundamental change in emphasis from "data collection" to "valuation".

Recent developments in assessment theory and practice in North America, particularly the more widespread use of market data and income approaches in recent years, suggest that Ontario assessors will have to be familiar with a number of appraisal methods in order to exploit fully the potential for accurate and up-to-date market value assessments. In this sense, an exclusive reliance on the cost approach, or even some version of the cost approach with a "market orientation", will be unnecessarily restrictive. Therefore, the second paper sets out an organizational structure under the name of neighbourhood assessment which encourages the growth and development of new methods and techniques for mass appraisal; the paper then goes on to examine the feasibility of the concept in terms of the workload and skills of Ontario assessors.

The third paper tests the practicality of neighbourhood assessment in the Regional Municipality of Durham. In this case, the specific objective of the project was to establish the feasibility of neighbourhood assessment in its most complete expression: could practicing assessors value all properties in a neighbourhood in a reasonable length of time? More importantly, could they do the job without any specific valuation instructions or procedural manuals except

the general rule of thumb that assessments meet the requirements of Section 27 of The Assessment Act? As the article shows, these goals were not only met, but in some respects were surpassed: the assessors not only achieved marked improvements in valuation accuracy, but also demonstrated a marked ability to develop innovative solutions when adapting general appraisal procedures to the exigencies of the local market. In this sense, the study not only establishes the feasibility of the neighbourhood assessment concept, but also promises a more general upgrading of assessment practice.

Development of the research program

Neighbourhood assessment is the result of a persistent research effort over the past five years by the participants in the Residential Appraisal Project and the Neighbourhood Assessment Project in the Assessment Standards Branch. Following the lead of work in the United States, the Residential Appraisal Project began in 1970 with a preliminary experiment in the City of Oshawa. By 1972, this work had crystallized into a mass market approach for valuing residential properties in Ontario. This approach, which combined a computerized information system and statistical analysis, was then applied to the analysis of single family sales in eight other urban centres in Ontario, ranging in population from 15,000 to 300,000.

The success of the method, which was at that time based on multiple regression analysis, sparked the development of a full prototype system in the east part of Metropolitan Toronto in 1973. In this case, the objective was to look not only at the accuracy and general efficiency of the market data approach as compared to the cost approach, but at the kinds of information systems which would be required to maintain market values on a yearly basis in Ontario. This project again demonstrated the advantages of the market approach and computerized files. It also became one of the more compelling reasons for the decision in 1973 to implement a province-wide valuation file. At that time, the Ontario reassessment program was severely disrupted by boom conditions in the real estate industry. The rapid changes in market values demanded ways and means to obtain faster and more frequent updates of assessments. As a result of the successes of the Residential Appraisal Project, the computer became the most viable alternative for maintaining market assessments.

While the Valuation File was being set up, the project entered a new phase: a systematic comparison of the results of sales analysis in the ten urban areas which had so far been included in the research program. This study yielded a number of very revealing facts about the residential real estate market which are discussed in some detail below; however, the most immediate result from a practical standpoint was the development of a simplified "non-regression" technique for the market data approach. This technique, which is referred to simply as graphical analysis, was successfully applied in Woodstock and Kapuskasing in 1975. The analysis in Woodstock employed the same data which had been used for multiple regression analysis; in Kapuskasing the study encompassed the entire appraisal process, from data collection through the production of a final residential roll based on 1974 market transactions.

The Neighbourhood Assessment Project followed closely on the success of graphical analysis. However, one other development in the Division was crucial to its formation: the more general requirement for a decentralized organization offering greater professional scope to individual assessors and an efficient method for maintaining market value assessments.

As a result, the neighbourhood assessment concept was recommended and tested in the Regional Municipality of Durham. Successful completion of this field study has marked the conclusion of the research program which began in 1970.

Acknowledgements

Almost all of the research for the market data approach and neighborhood assessment in Ontario has been done by the central research agency of the Assessment Division, the Assessment Standards Branch. From this vantage point, however, future refinements and improvements are more likely to come from research and analysis at the neighbourhood level; indeed, the work in Durham is ample evidence of this tendency which should gain momentum as more assessors bring their knowledge and experience to the task.

For the present, however, several individuals must be acknowledged for their important contributions at different stages of the Branch's program. Randy White started the project and established the theoretical framework of the research. One of his principal concerns was that system considerations not become more important than valuation considerations; in retrospect, this made the transition from computerized to manual methods of analysis much more apparent. Special credit also goes to James Tait for his collaboration in the development of the graphical solution of the market data approach. Subsequently, he successfully completed the first full application of the method — from data collection through to final assessments — to residential properties in the remote northern community of Kapuskasing.

Other individuals in the Branch also made important contributions: the success of the Toronto study and the presentations which preceded the decision to implement the provincial valuation file owed much to Joe Berridge; Loretta Larsen and Leslie Gyongyossy made particularly important technical contributions to the synthesis of the results in the ten study areas; and Drew Ritchie and Katherine Day developed the neighbourhood assessment feasibility study which culminated in the Durham case study. Much of their success in this regard came from their earlier experience with the Valuation File Impact Study.

Finally, those of us in the Branch who participated in the Durham project owe special thanks to the four Durham property assessors — Ed Hanowski, David Stones, Wayne Maybee and Brian Dignem — who were literally commanded for the project, and yet graciously and enthusiastically spent much of their own time to make a fair test of neighbourhood assessment.

DAVID MONTGOMERY,
Project Leader,
Assessment Standards Branch.



The Market Data Approach for Mass Appraisal:

GRAPHICAL ANALYSIS

DAVID MONTGOMERY
JAMES TAIT
Assessment Standards Branch

For the past five years the Assessment Standards Branch has conducted research into the market data approach for mass appraisal. During that time the research team has developed a number of ways to analyse sales so that they may be used directly to value single-family residences for property tax purposes. The methods vary from sophisticated statistical models and complex computer-oriented data systems to more straightforward manual procedures. This paper outlines one of the latter — a simple field procedure based on graphical analysis. The presentation is instructional rather than a proof or demonstration of the technique; for this the reader is referred to the Durham paper which follows, documenting a number of applications.

The graphical technique for the market data approach is an adaptation of the traditional textbook approach, sometimes called the comparative sales method. This adaptation was originally outlined by the research team in the Branch publication, *The Comparative Sales Method for Mass Appraisal*, which married multiple regression analysis with traditional appraisal concepts and procedures. Although computerized multiple regression analysis has been dropped from the method presented here, the methodology is basically the same, and the original formulation is still valid for the mass market approach using statistical analysis.

The traditional market approach has two main steps: selecting comparable sales, and making dollar adjustments for differences between the sales. These steps are refined in this paper by graphical analysis, which replaces the guesswork and arbitrariness of the earlier approach with objective criteria for selecting adjustment factors; as a result, graphical analysis removes one of the major obstacles to the use of the sales comparison method for mass appraisal purposes.

At present the graphical method has been used primarily to value single-family properties; consequently, all of the examples and property characteristics mentioned in this paper are exclusively related to residential properties. Similarly, the methods and procedures have been developed solely within the context of these properties; while perhaps it is wise to preserve this restriction on the scope of application for the immediate future — or at least until sufficient research is done — there doesn't appear so far to be any reason why this method would be inappropriate for other property types. As a matter of fact, much of the work in Ontario on gross income multipliers (also called gross rent multipliers), which has been fairly loosely structured up to this point, bears a strong resemblance to the market data approach presented here. This is most marked in those instances where income properties are divided into groups of comparable properties by the ages of the buildings and the size of the gross income multiplier. Other similarities should become more obvious to the practised eye as we proceed; in any event, it seems clear that the range of application of this approach eventually will extend beyond single-family residential properties.

Almost all of the procedures and guidelines have been developed during the application of the market data approach to residential sales data in the following eleven urban areas in Ontario: Barrie, Belleville, Brampton, Galt, Kapuskasing, Oshawa, Ottawa, Stratford, Toronto, Trenton and Woodstock. These include urban populations ranging from 12,000 in Kapuskasing to two million in Metropolitan Toronto, and represent markets located in all parts of the province. In addition, the data was taken from a variety of market periods: for example, the market period in Oshawa was 1969; in Brampton, 1970 and 1971; in Toronto, 1971 and 1972; and in Kapuskasing, 1974.

Despite the diversity of market conditions, the results in each area were remarkably similar. This is particularly important because the research strategy was specifically designed to select sets of comparables and property characteristics *objectively* in each area and to achieve the highest possible level of estimating accuracy without regard to the results in other areas. (Accuracy measurements are treated in more detail later.) In this sense we had anticipated considerable variation from place to place in the way comparable properties would be identified and in the kinds of price adjustments which would be made. In fact, there wasn't; in each instance we discovered that properties were most successfully classified or "grouped" by building age (chronological age), then adjusted for price within each "building age group" by building size (total floor area), and in some cases, by one or more other easily identifiable property characteristics. It was found also that the level of accuracy was similar in each area, and furthermore, varied systematically with building age. These three findings are the foundation of the simple field procedure which is set out below.

General guidelines

While no exact rules of thumb can be formulated, something should be said first about the size of market area and the span of market period which are suitable for the market data approach. The key is the number of *bona fide* sales which are available for analysis. In our work we tried to obtain enough sales to divide the properties in an area into at least four or five groups. As a result, we sometimes had to take sales in the smaller urban centres from a longer market period than we would have liked. Wherever possible, the market period was restricted to one year; in the smaller centres, however, this period was often extended to two years. In general, this does not appear to have had any adverse effect on the results; we were able to account for the particular date of the sale in the market period using statistical techniques.

Where statistical methods are not used, however, there is a problem: there is currently no adequate way to identify accurately the effect of "date of sale" on selling prices. Consequently, for purposes of the simple field procedure, it is preferable to obtain more sales by extending the boundaries of a market area rather than by extending the market period beyond one year, particularly in an inflationary period. This procedure seems to be supported by some of our results which indicate that it is relatively easier to account for differences in price which result from differences in location than from differences in time.

The case of Belleville and Trenton, towns ten miles apart, is instructive in this regard. When these communities were studied, we were still relying on computerized multiple regression analysis. Trenton, much the smaller of the two, had only enough sales for one multiple regression analysis; the residential sales therefore could not be divided into smaller, more homogeneous groups. In order to get around this difficulty, we combined Trenton's sales with Belleville's, noting Trenton sales wherever they occurred in each property group. When the accuracy of the Trenton valuations produced in this way was tested, they were substantially more accurate than the valuations produced using Trenton data alone. This seems to have two implications: first, it is important to identify property groups; second, where more market data is required, the market area should be expanded.¹

Order of analysis

The order of analysis for the graphical method is fundamentally the same as the order of analysis for multiple regression: given a set of residential sales for any geographic area, the data is first examined as a whole, then progressively subdivided or grouped into subsets of homogeneous properties.² It is very important that this order be followed; it serves not only to develop an overall perspective, but helps also to prevent undetected biases from entering the analysis. For example it was found in Durham³ that contrary to expectations, the differences in lot size between one- and five-acre parcels had very little observable effect on price. This became particularly important because it meant all these properties could be kept together in one group for further analysis and comparison. Otherwise, the properties might have been placed into separate groups by lot size, when in fact this really made no significant contribution to the objective of the analysis — an accurate market value estimate.

In this regard, two other points should be noted: once groups of homogeneous properties have been established, it is very difficult to retrace steps or to compare groups; also, unnecessary stratification may restrict opportunities to compare sales for the purposes of assessment appeals.

Building age groups

The market data approach traditionally begins with the selection of comparable properties — properties which are homogeneous with respect to most of their physical property characteristics. Similarly, the simple field procedure starts with the classification of properties, in this case by building age groups which are set out on the following chart (Figure 1). This chart also contains a list of property characteristics which are most often used to adjust for the prices of large and small houses,⁴ depending on whether they were built before or after 1954. These will be treated in more detail in the next section.

The first step in the analysis is to divide the sales in the order indicated by the chart. For example, the first division is at 1954, which separates properties built "before 1954"

Figure 1

Residential Property Groups
and
Adjustment Factors in Ontario

AGE GROUPINGS			ADJUSTMENT FACTORS	
I	II	III		
1954 AND AFTER	1960-1972	1971-1972	NEW	Floor Area
		1968-1970	LARGE	Garage
		1960-1967		Neighbourhood Frontage
BEFORE 1954	1954-1959	1954-1959	NEW	Floor Area
	1931-1953	1931-1953	SMALL	Garage
	BEFORE 1931	BEFORE 1931		Date of Sale
				Neighbourhood
				Style
BEFORE 1954	BEFORE 1931	BEFORE 1931	OLD	Basement
			LARGE	Floor Area
				Neighbourhood
BEFORE 1954	BEFORE 1931	BEFORE 1931		Frontage
				Age
				Fireplace
BEFORE 1954	BEFORE 1931	BEFORE 1931	OLD	Floor Area
			SMALL	Structure
BEFORE 1954	BEFORE 1931	BEFORE 1931		Age

from properties built "1954 and after". If required, the next break should be made at 1931 and/or 1960, and the final break at 1968 and/or 1971. This sets the maximum number of building age groups in any market area at six.

An important consideration is the number of sales to include in each group. Our experience suggests the absolute minimum number of properties in a building age group is five; however, a group of this size is not recommended since it is almost impossible to identify adjustment factors later in the analysis. Nevertheless, the kind of property mix in some areas may make a small group necessary. In this sense, the most important point to keep in mind — and this will be continually emphasized at each stage of the analysis — is that this group of properties will constitute the basis of the defense in an assessment appeal. Consequently, it may be judicious in certain circumstances to combine an unusually small group of properties with another group in order to provide more comparisons.

The maximum number of properties in a building age group is, in theory, unlimited; in practice, however, too many properties make manual methods of analysis very complex. One way to overcome this is to take a random sample. In most market areas, however, sampling will not be necessary since the number of sales available for analysis in any market period is quite manageable.

The optimum number of sales for an age group, for purely technical considerations, has in our experience been somewhere in the order of fifty to one hundred; with this number, important adjustment factors seem to be more readily identified and clear price patterns begin to emerge, particularly with respect to the relationship between price and building size. However, in each case, the optimum will be decided primarily by the particular mix of properties in any market area and by the experience which results from defending assessments in an appeal situation.

Adjustment factors

The next general phase in the analysis is the selection of adjustment factors within each property group. The method is based on the analysis of graphs; and the cornerstone of graphical analysis is the relationship between the selling price of properties and building size. Figure 2 shows a typical graph; in this case, the graph represents a group of single-family residences built from 1931 to 1953 in Woodstock (population: 25,000). This kind of graph is the basic working tool used to select adjustment factors and formulate a "valuation equation".

It may be helpful to mention a simple but important point about the construction of graphs: because patterns in the data are most readily detected when observations are spread over an area which is close to being a square, the two axes should be roughly the same length. To ensure this result, one should first identify the low and high values in the data before setting the low and high values on each axis. At the same time, it has been found useful generally to ignore the extreme values in order that the bulk of the observations are not cramped in the middle of the graph. These extreme values can then be noted at some appropriate point on the borders of the graph.

Building size

Building size is by far the most important adjustment factor for single-family residential properties. As a matter of fact, size is the *only* property characteristic which must be considered in every building age group — as important as other factors such as "neighbourhood" are, their importance is always secondary. In fact, size in many cases reflects these other factors; for example, a "better" neighbourhood may be better precisely because the properties are bigger; so as long as size is taken into account, there may be no need to consider neighbourhood quality for valuation purposes.

There are three ways to adjust for building size. The most common way is to apply a fixed increase in price for a fixed increase in floor area. On the graph this is done by placing a straight line through the middle of the distribution of properties. This line can be calculated using statistical techniques, or it can be drawn through the distribution by eye. Our experience indicates the manual method is preferable for reasons of economy and because the variation in prices which results from different people placing or positioning the line is minimal.

In most cases, this line will represent a rough average of the price of properties for any particular floor area. Figure 2 shows where the line has been positioned in the Woodstock property group.

The second way to adjust for size is to identify differences in the relationship between price and size on the graph, and to apply different lines to the different relationships. This can also be illustrated with reference to the same Woodstock property group. The next graph (Figure 3) shows a break in the relationship at 850 square feet; above this point, a fixed increase in floor area is associated with a smaller fixed increase in price. In other words, in this age group the price of properties with smaller houses is more sensitive to changes in floor area than the price of properties with larger houses. This, of course, is not a general rule, but applies only to this particular property group in Woodstock in 1971. We have encountered some age groups in our work which have as many as three different relationships between price and building size.

The third way to adjust for size is merely to calculate the average selling price of properties where there is no relationship between price and building size. We have found that this often occurs for properties with medium-size houses. Usually, in this case, smaller and larger houses display a clear pattern of association between price and size; somewhere in the middle, however, it seems selling price is unaffected by changes in building size.

Other adjustment factors

The earlier chart which set out building age groups (Figure 1) also listed other property characteristics, in addition to building size, which are important adjustment factors. While the list is compartmentalized by building age and size criteria, the boundaries between the lists should not be regarded as immutable. The lists were originally prepared from a compilation of the number of times each property characteristic appeared as an adjustment factor in the eleven study areas. Since that time we have found that "garage", "neighbourhood", and "style" are the most common adjustment factors in the graphical method. In the case of newer houses, "double garage" is often important; for old houses it is important to identify neighbourhoods

FIGURE 2

with more noticeable signs of physical deterioration; and for houses built from 1931 to 1953, one should take special note of one-and-a-half storey houses. For example, in the Woodstock property group for this period, there is a clear relationship between the price of properties and whether or not the houses were one-and-a-half storeys (see Figure 3). These houses are indicated on the graph by a star; there are larger houses located along the lower edge of the distribution. It is easy to see that they are consistently selling for less than the other houses of the same age and size.

There are no hard and fast rules for uncovering adjustment factors other than size. We have listed the ones which we have found to occur most frequently; this is not to suggest other factors won't be important in some other place or at some other time. We would recommend, however, that this list is the best place to start, particularly in Ontario. It is also likely that only one or two adjustments will bear any relationship to price in any particular age-size group.

The property characteristics which one suspects are important (naturally, this is where a knowledge of local markets is particularly useful) should be examined one after the other by colour coding the various categories of a property characteristic — for example, by examining the difference in facilities for a car: no garage, carport, single garage, and double garage. It is usually convenient to have several copies of the graph of a property group on hand, in order to avoid the confusion which inevitably results from coding several property characteristics; as long as all graphs are kept immediately at hand, it doesn't seem to matter whether or not this process is followed on one graph or five graphs. During this process one is looking to see if any properties with specific property characteristics cluster together on the graph, distinct from all other properties of similar size. If they do, the characteristic is used for valuation purposes; if on the other hand, there is no clear separation of properties, the characteristic is discarded.

The property characteristics which are identified as adjustment factors are then considered along with the

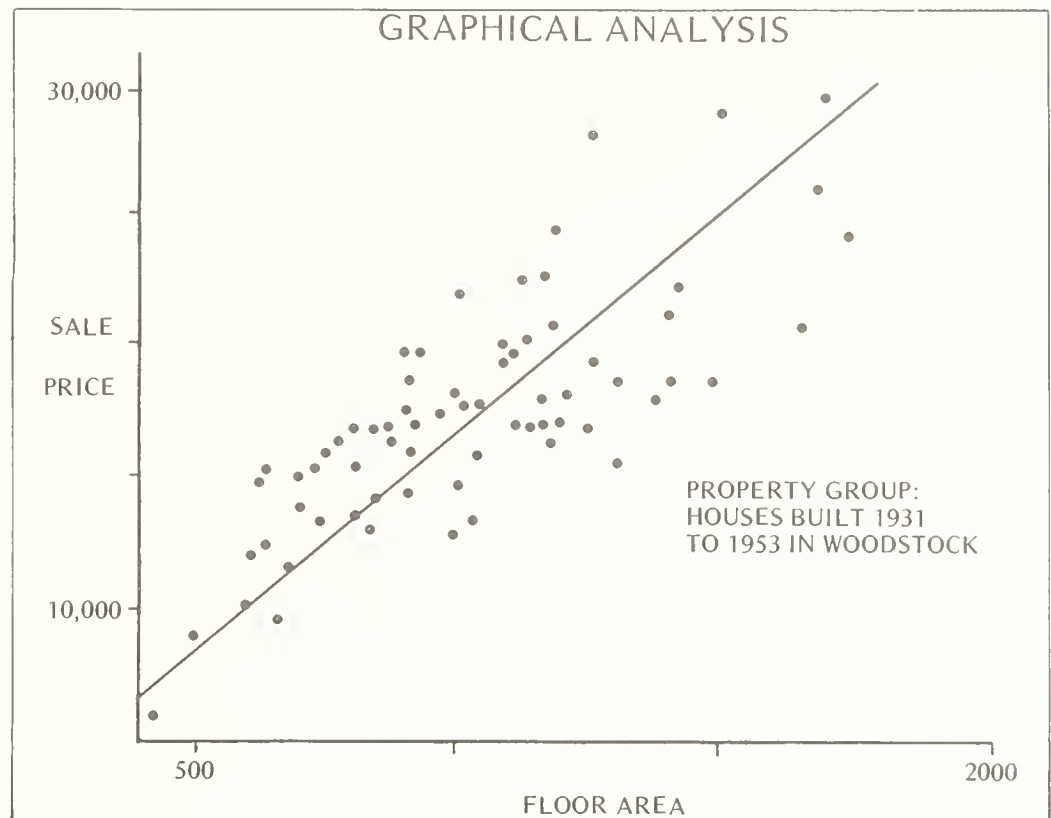
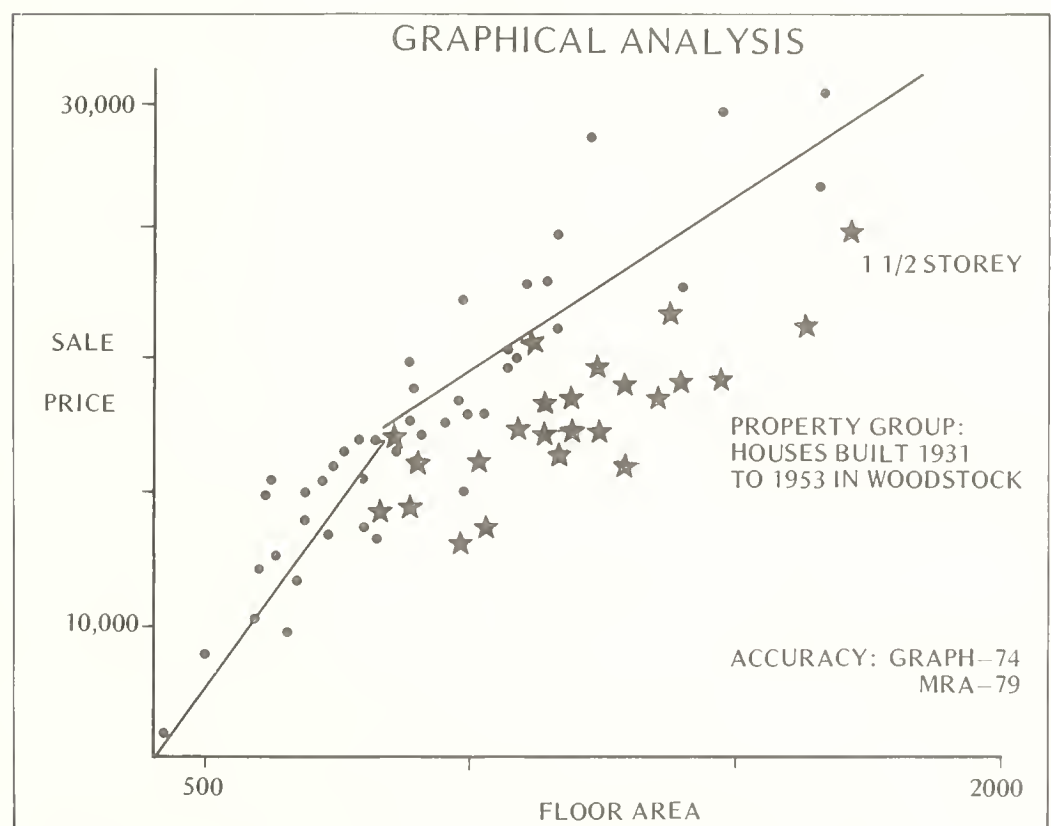


FIGURE 3



adjustment for building size. For instance, in Woodstock the general price difference between properties with one-and-a-half storey houses and other properties was \$4500. This was integrated with the adjustment for building size by moving the line so that it passed through the middle of either the distribution of properties with one-and-a-half storey houses or the distribution of the other properties. In this example, we chose the latter and subtracted \$4500 if the property had a one-and-a-half storey house. Although there are other ways of making the adjustments, we have

found it least confusing to make only *one size adjustment for each age-size group*, and then to add or subtract for other adjustments in that group.

Subjective factors

One of the key findings of the research in the eleven urban areas was that the most accurate valuations were developed from objective "bricks and mortar" descriptions rather than from more subjective descriptions such as building quality. The only exception was "neighbourhood" descriptions which were either subjectively defined by experienced assessors who were familiar with locational influences in a particular market area, or objectively defined by identifying geographic areas with similar property characteristics. In both cases the accuracy of the results was the same. Otherwise, subjective judgment was not, and probably should not be, a factor in graphical analysis.

In Ontario, the subjectivity of "quality class" and "building condition" is a case in point. Both building ratings have been developed for the purpose of valuing properties with the cost approach; in fact, quality class is — along with square foot cost rates — one of the most important components of this approach. For the most part there are certain specific procedures for classifying properties; they are not exact, however, and in the last analysis a figure is arbitrarily selected by an "experienced assessor". It is therefore a subjective judgment, and to this extent can vary from one assessor to another. For example, it sometimes happens that the quality class of properties is changed in order to obtain more accurate market value estimates. Because of this, it is possible for similar properties to be classed differently from one region to another.

The same kind of subjective selection procedures apply to building condition, which is dependent for exact specification on the judgment and opinion of the individual assessor. Consequently, it is quite possible that if several assessors were asked to classify and rate the condition of the same structure, their results would vary — perhaps the variation would be slight; nevertheless, they *would* vary.

The variations which arise from the subjective nature of a quality rating would not necessarily mitigate their use, as long as the definition were systematic and consistently applied to all properties. However, research has shown that current definitions do not add any significant information about a property which helps explain differences in market prices, beyond that already supplied by the "bricks and mortar" information such as building age, size, and style. To illustrate: houses with a low quality class also tend to be older, smaller bungalows or one-and-a-half storey houses; and houses with a high quality class are generally newer, larger split-level or two-storey houses. So, in this case, not only is quality class redundant, but two of the other characteristics are unnecessary also, since the assessor only requires a single piece of information to make the distinction between the two basic types of properties.

All things considered, the time and effort spent collecting and refining the data required for classifying properties are of dubious value. At the same time, it is admittedly very difficult for an assessor who is used to the convenience of the quality rating for classifying properties to believe that building condition or structural quality does not have some effect on price, particularly in the case of older properties which were constructed at a time when building standards were much more loosely supervised and controlled than they were after the introduction of Federal Government financing in the early 1950's. In this sense, there seems to

be some justification for attempting to develop a more systematic measure of building quality, or for introducing some adjustment for quality in those property groups which seem to require it. However, it must be made clear that any such attempt must not cloud or obstruct objective analysis; it would be particularly unwise to jeopardize the acceptability of an otherwise accurate valuation by entering into a debate over a subjectively-defined adjustment factor.

Valuation equation

Once the analysis is complete, a valuation equation is formulated for each age-size group. For example, in the first group in Woodstock, which includes properties with houses under 850 square feet, the adjustment for floor area is calculated from the point where the line crosses the selling price axis on the graph — \$6000 and 400 square feet. To determine the dollar value of an increase in floor area, we simply divide the length of the line in dollars (the line includes the price range, \$6000 to \$17,500) by the same length of the line in floor area (from 400 to 850 square feet): $\$11,500 \div 450 = \25 . So for every square foot increase in floor area over 400 square feet, we multiply by \$25 and add the product to \$6000.

The calculation for larger houses in the Woodstock property group is identical: we merely include in the equation the adjustment for properties with one-and-a-half storey houses, which is a \$4500 deduction from the value determined by floor area. The Woodstock valuation equations are summarized as follows:

VALUATION EQUATIONS FOR HOUSES IN WOODSTOCK BUILT FROM 1931 TO 1953

If House 400 to 849 Square Feet:

Preliminary Assessment = \$6000 + \$25 For
Every Square Foot Floor Area Over 400.

If House 850 to 2000 Square Feet:

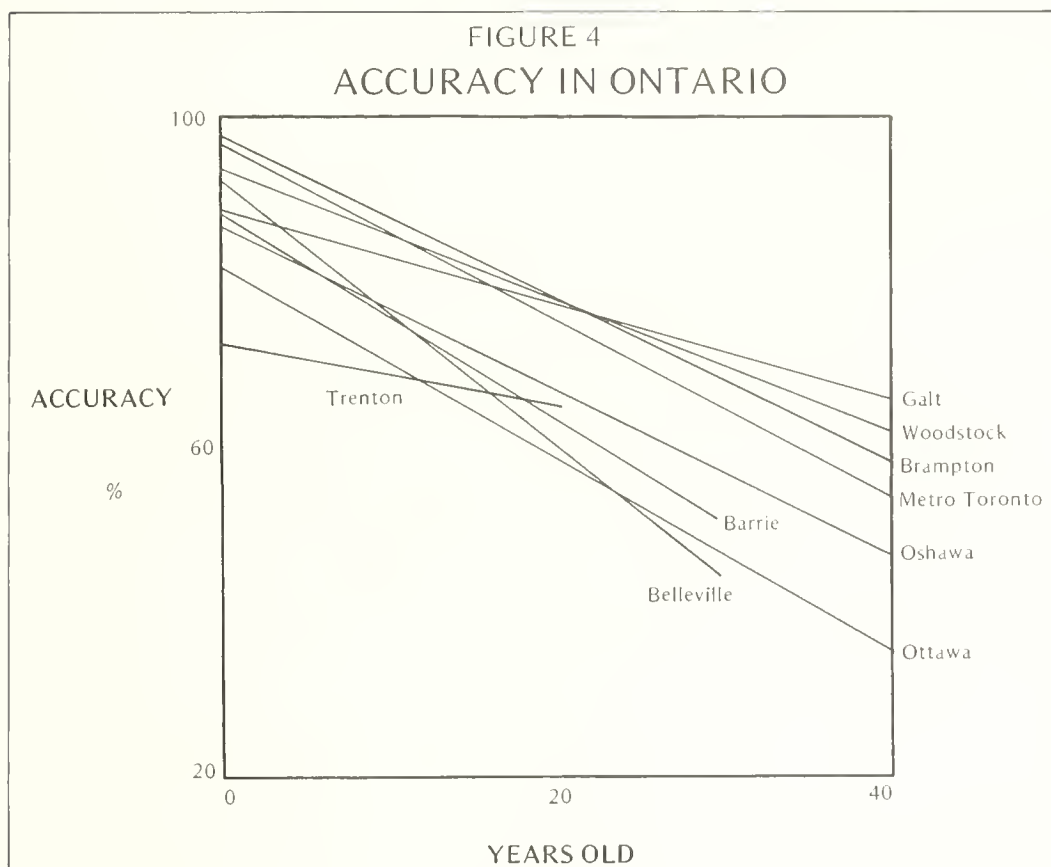
Preliminary Assessment = \$17,000 + \$14.30 For
Every Square Foot Floor Area Over 850-\$4500
If 1-1/2 Storey Detached.

Accuracy

The third phase in the analysis is testing for valuation accuracy. A perennial problem in appraisal methodology is knowing when enough information has been considered to make a final judgment about value. For example, in a typical "sales-assessment ratio study" — this is probably the most common way to check the accuracy of valuation — the results have been used most often merely as a measure of the "level" of assessments by determining either the average or median ratio. While it is sometimes noted during the analysis that there is a wide variation in the ratios, this information is generally not used to improve or otherwise modify valuations.⁵

In this respect, our research in the eleven areas seems to offer some useful guides. In a number of tests specially designed to investigate the remarkably consistent level of accuracy in each area, it was found that accuracy is systematically related to building age; furthermore, the relationship is nearly identical in every area.

We have measured accuracy by testing assessments against sales, somewhat in the manner of sales-assessment ratios. For example, if three properties assessed at \$23,000 actually sell for \$15,000, \$20,000, and \$25,000 respectively, then we express the difference between each assessment and each sale as a percentage of the sale. Thus, the



percentage for the \$15,000 sale is $(\$23,000 - \$15,000)/\$15,000 \times 100\% = 53\%$; for the \$20,000 sale it is $(\$23,000 - \$20,000)/\$20,000 \times 100\% = 15\%$; and for the \$25,000 sale it is $(\$25,000 - \$23,000)/\$25,000 \times 100\% = 10\%$. Now we can conveniently summarize the overall accuracy results by indicating that one out of three, or 33%, of the properties is "estimated" or "assessed" within 10% of sale price. We have arbitrarily chosen 10%; we could just as easily have used 5% or 15%, or all three.

Figure 4 shows the accuracy in ten of the study areas by building age, using this measure of accuracy. In Ottawa, for example, 82% of new houses were estimated within 10% of sale price, while at the other extreme, only 38% of the forty-year-old houses were estimated with the same degree of accuracy. On the upper edge of what might be viewed as the "accuracy belt", 98% of Brampton's new houses were estimated within 10% of sale price, and 60% of the old houses were estimated within 10% of the sale price. Most of the other results fall somewhere between these limits.⁶ The functional relationship between accuracy and age terminates at about 40 years: the accuracy of estimates for houses over 40 years is generally around 50%.

Except for Trenton, the accuracy lines are very nearly parallel. This encouraged us to combine the accuracy results by dwelling age for all of the urban areas to produce a generalized linear approximation. We then used this relationship to postulate an "expected" level of accuracy for valuation purposes. While this should not be taken as a hard and fast rule, the expected level of accuracy for any property is determined by the equation:

Accuracy = $90 - \text{Chronological Building Age}$
which is the linear approximation for the accuracy chart.

The implications of this finding have far-reaching significance, not only for appraisal methodology, but also for a general understanding of the Ontario residential real estate

market itself. For example, we certainly did not expect that the dispersion of selling prices for similar properties would be the same in both large and small urban areas; instead, we anticipated that the level of market information in large areas would be better, and consequently the prices paid for similar properties in large areas would also tend to be more similar. Obviously, this doesn't appear to be the case. In terms of assessment practice, this is particularly important because it means that assessors in different locations should not be expected to value properties at different levels of accuracy merely because of location.

In terms of graphical analysis, this finding about accuracy provides a useful guide to the assessor for terminating the analysis. In other words, if in the case of older properties the analysis has reached a level of accuracy of about 50%, then in the absence of any obvious adjustments, one can consider the analysis complete.

It might be noted that increases in accuracy are more often the result of proper selection of property groups and the method of treatment of important property characteristics than of the identification of new and exotic property characteristics. Older houses are a case in point: because the estimates for older houses were less accurate, they were made the subject of a detailed field study early in the research program. The objective of the study was to increase accuracy by identifying additional factors which would explain the differences in price. However, despite very close and careful attention to many different attributes such as differences in financing, location, or structural quality and condition, no significant improvements resulted.

It seems, then, that the slow accumulation of individual alterations to houses over time makes it increasingly difficult for consumers to compare properties systematically. As properties get older, they become increasingly dissimilar; as a result, "comparison shopping" becomes more difficult and prices become more divergent.

The follow-up survey

The main purpose of this paper has been to set out the steps in graphical analysis, from the point at which data is made available and sales have been verified, to the completion of graphical analysis and the development of valuation equations. Although they have not been covered, the steps which come before and after graphical analysis are equally important; therefore, the reader should consult the standard textual materials for a review of the kinds of investigation which are required to establish bona fide transactions.

Unfortunately, this expedient is not available for the application of valuation equations. Each assessor is dependent to a large extent on the dictates of the local situation and his/her own judgment. However, it may be possible to give some general advice as a result of some exploratory work carried out by the Standards Branch.

Let us assume we are going into the field with a printout of all residential properties ordered by street address, and a preliminary assessment from a valuation equation. As we travel through the streets of the neighbourhood, one of the first impressions is that there are a host of adjustment factors which must be re-examined — the diversity in the field clashes jarringly with the homogeneity in the analysis. Once back in the office, however, the probability is that the analysis will withstand re-examination; nevertheless, it is worth doing on the chance that some new insights will lead to improvements in accuracy.

It will also be noted early in the survey that some properties have not been adequately described on the appraisal cards and are therefore inaccurately assessed by the valuation equation. This can occur through errors in measurement at the data collection phase, a mix-up somewhere in the record management system, or physical changes to properties since the previous inspection. In this case the appropriate changes can be made in the field or computed back in the office.

One of the obvious tasks which must be performed at this stage is the valuation of properties which were not represented by sales and therefore are not given preliminary assessments. They can be valued with reference either to their closest comparables, or if they are very unique, to replacement cost methods, or by a combination of both. In any event, this task is most readily performed in the field, where similarities and differences can be seen firsthand.

Another problem of interpretation arises directly from the process of grouping properties by dwelling age; in this case, geographic location sometimes must be given more importance than dwelling age in arriving at the final value. For instance, one may find some houses isolated in neighbourhoods with houses of different age groups. Where the differences in dwelling age are not substantial, the lone property may be more equitably valued as if it were a member of the dominant age group; or, even where the age difference is significant, it might be considered expedient to adjust for the difference in surroundings. Obviously, this situation calls for considerable judgment, and the best place to exercise this judgment is in the field where the visual impact of comparisons may be the deciding factor.

Conclusion

This paper has outlined a manual procedure for the market data approach which can be applied to residential properties for mass appraisal purposes. The procedure has been tested in a number of locations in Ontario and has proven to be accurate and efficient. Hopefully, the scope for experimentation can be expanded to include other areas and different property types.

In any event, it seems clear that there is now a viable alternative to the cost approach for mass appraisal in Ontario. It remains to be seen whether the method can find a place in the assessment organization. Based on our research, we believe it can. The next paper outlines a conceptual framework we have developed for potential implementation in Ontario. It is followed by an article describing the results of a valuation study, using graphical analysis, which was recently carried out in the assessment region of Durham.

FOOTNOTES

- ¹ As is indicated below, data requirements are not as strict for graphical analysis as they are for multiple regression analysis; consequently, the requirement for larger market areas should be a problem only in hamlets and sparsely settled rural areas.
- ² The decision to stratify residential market data was made in conformity with appraisal theory; and the stratification process was based on analysis of residuals from regression. As it turned out, this procedure produced substantial improvements in the accuracy of market value estimates using multiple regression analysis.
- ³ See the Durham article later in this issue.
- ⁴ Very generally, the demarcation point between large and small houses in our work has been about 1,200 square feet.
- ⁵ Virtually the only attempt to examine this information was made in a study by F. Bird, *The General Property Tax: Findings of the 1957 Census of Governments* (Chicago, 1960), in which he developed a measure called the "coefficient of dispersion". However, this measure does not seem to have achieved any widespread acceptance among appraisers.
- ⁶ The slope of the Trenton accuracy line is noticeably different. Part of the explanation lies in the fact the Trenton market data was of poor quality, part in the fact it is a smaller area.



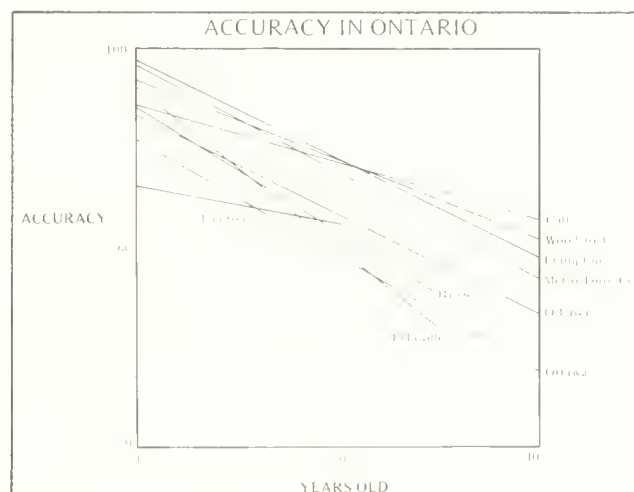
MARKET DATA APPROACH

SUMMARY OF GRAPHICAL ANALYSIS

- Select a Market Period (e.g., one calendar year) and a Market Area (e.g., a neighbourhood).
- Select Building Age Groups: divide sales into the appropriate combination of Age Groups as shown on the chart; make the selection on the basis of personal market knowledge or by graphical analysis of building age, or a combination of both.
- Prepare a list of sales which includes the appraisal data in the chart, and roll number and street address. This is the minimum amount of data which should be listed. Sort the list by building age, and within building age by floor area.
- Construct a graph with sale price on the vertical axis and floor area on the horizontal axis. Plot the sales on the graph; for cross-referencing purposes, assign a sequence number to the properties on the list and note the same number on the graph.

AGE GROUPINGS		
I	II	III
1954 AND AFTER	1960-1972	1971-1972
		1968-1970
BEFORE 1954	1954-1959	1960-1967
	1931-1953	1954-1959
		1931-1953
	BEFORE 1931	BEFORE 1931

ADJUSTMENT FACTORS	
NEW	Floor Area
LARGE	Garage
	Neighbourhood
	Frontage
NEW	Floor Area
SMALL	Garage
	Date of Sale
	Neighbourhood
	Style
	Basement
OLD	Floor Area
LARGE	Neighbourhood
	Frontage
	Age
	Fireplace
OLD	Floor Area
SMALL	Structure
	Age



- **Graphical Analysis:** Is there an obvious straight line relationship between sale price and floor area?
 If there is:
 Draw a line through the center of the distribution of sales.
 Identify Adjustment Factors.
 If not:
 Identify Adjustment Factors without putting in a line
 or
 Look for straight line relationships within limited size ranges of the distribution and place line(s) in the appropriate ranges.
- **Identify Adjustment Factors:** Taking one property characteristic at a time, colour code sales to detect any patterns in price. If there is a pattern, calculate a dollar adjustment from the line for the difference in price. Repeat this process until all adjustment factors have been identified or accuracy is acceptable.
- **Valuation Equation:** A valuation equation is produced for each age-size property group. It takes the form of a square foot adjustment for floor area, and a fixed dollar adjustment for any other characteristic; thus, Preliminary Assessment = Floor Area X Floor Area Rate + Adjustment Factor(s).
- **Accuracy Test:** Calculate the percentage of market estimates (preliminary assessments) which are different from actual sale prices by ten percent or less. Compare the results to the Accuracy Chart; the general relationship for the Chart is: Accuracy = 90% - Building Age.

REGIONAL DELEGATES for aspects

Eastern Ontario Assessment Area

1. Prescott & Russell-Stormont
Dundas & Glengarry — Mr. H. Morris
2. Lanark-Leeds & Grenville — Mr. G. Grey
3. Ottawa-Carleton — Mr. H. Hafenbrack
4. Renfrew — Mr. H. R. Barkell
5. Frontenac-Lennox & Addington — Mr. K. Froats
6. Hastings-Prince Edward — Mr. J. A. Smith
7. Haliburton-Peterborough-Victoria — Mr. J. Guerin

Central Ontario Assessment Area

8. City of Toronto — Mr. N. Stamboulie
9. North York — Mr. A. W. Wilson
10. Scarborough-East York — Mr. D. Struke
11. Etobicoke York — Ms. C. Farr
12. Ontario — Mr. B. Robinson
13. York — Mrs. C. Shaw
14. Halton-Peel — Mrs. Barbara Trotter
15. Simcoe — Mr. M. Lumsden
16. Muskoka — Mr. R. McCann

Western Ontario Assessment Area

17. Niagara — Mr. J. Harriman
18. Wentworth — Mr. L. B. Charlton
19. Brant-Haldimand-Norfolk — Mr. J. Huff
20. Waterloo — Mr. C. Meadows
21. Dufferin-Wellington — Mr. I. Dunlop
22. Elgin-Middlesex-Oxford — Mr. R. Scott
23. Huron-Perth — Mr. L. Harloff
24. Bruce-Grey — Mr. R. Robertson
25. Kent-Lambton — Mr. A. Smith
26. Essex — Mr. J. Storey

Northern Assessment Area

27. Nipissing-Parry Sound — Mr. L. Warner
 28. Cochrane-Timiskaming — Mr. A. Young
 29. Manitoulin-Sudbury — Mr. I. McJannet
 30. Algoma — Mr. F. St. Jules
 31. Kenora-Rainy River-Thunder Bay — Mr. I. Zhiha
-

Organizing for Neighbourhood Assessment

ANDREW B. RITCHIE
KATHERINE DAY
DAVID MONTGOMERY
Assessment Standards Branch

The Executive Director of the Assessment Division has indicated that the organization of regional offices and the responsibilities of assessors will undergo substantial change subsequent to reassessment.¹ Certain steps have already been taken in this direction by reorganizing many of the regional offices on a geographic basis. However, it is the contention of this paper that the transition from a highly centralized structure organized on an assembly line basis to a more dispersed geographic structure needs to be taken one step further: in order to take full advantage of geographics, the valuation staff of all offices should be organized under the concept of neighbourhood assessment, in which assessors will independently value all types of property with all available methods and be responsible for all phases of the appraisal process within their geographic areas.

Naturally, an organizational change of this magnitude would involve a substantial change in the current job responsibilities of assessment personnel. In this context, this article will examine the feasibility of neighbourhood assessment and the nature and direction of some of the possible changes, and will relate them to some recent research studies about neighbourhood assessment undertaken by the Assessment Standards Branch.

What is neighbourhood assessment?

From the foregoing it is clear that the main difference between "geographics" and "neighbourhood assessment" is the degree of valuation autonomy explicitly vested in assessors. The latter calls for an extension of valuation alternatives with less reliance on the cost approach. In fact, the entire success of neighbourhood assessment is seen to

depend heavily on the use of the market data approach to produce market value. Therefore, if this new organization is to be effective, it must adopt methods of analysis and a complimentary organizational structure that will enhance the autonomous nature of the assessor's job.

The market data approach

The graphical method for the analysis of residential sales is ideally designed for neighbourhood assessment. It places at the disposal of each assessor a valuation method which is uniquely suited for use by one individual with a bare minimum of centralized controls. In this context the assessor tailors the precise details of his or her valuation methodology to the conditions in the neighbourhood; the only requirement for central control is an overall monitoring system based on conventional sales-assessment ratio studies.

The market data approach has a number of other distinct advantages: it is accurate — research in Ontario indicates significant improvements in accuracy and consistency over conventional cost-oriented valuation methods — and it is simple — there are no special requirements for a knowledge of computers or statistical techniques. As a result, the main task of the assessor becomes one of keeping his/her eye on the market in his/her neighbourhood in order to identify those important characteristics which distinguish price differences between properties.

Perhaps of even greater importance, however, is the fact that "neighbourhood" is itself one of the most influential characteristics for establishing market values in Ontario. In every one of the eleven urban areas examined in the past five years, the kind of neighbourhood in which a property

is located has had a direct bearing on price. However, the work to date is not sufficiently comprehensive — we have not been able to investigate the effects of neighbourhood and locational factors in enough detail. There are two reasons for this: first, we have been restricted by certain methodological and data coding problems whose solution awaits the application of intensive quality control checks — for example, much closer scrutiny of transactions — which are beyond our current resources; and second, we do not have first-hand knowledge of locational factors in the urban areas included in our research. This can be gained only by local familiarity and experience; as a consequence, the next logical step in the program is to include the influences of property characteristics which are deemed to be important by the “neighbourhood assessor”. In short, such locational factors as topography, zoning, and nearness to public transit and expressways are best examined by local assessors at the neighbourhood level.

Neighbourhood Assessment job responsibilities

From our understanding of the current duties of assessors, supplemented by the information obtained in a survey of regional personnel concerning “geographics”, neighbourhood assessment would seem to require two key positions — the building blocks of the organization. The first and most essential position is the *neighbourhood assessor*, a person assigned to a specific geographic area who is responsible for maintaining market value assessments on each property in his/her jurisdiction. Secondly, the organization would also seem to need a *neighbourhood coordinator*, a more experienced individual who would assist and coordinate the efforts of several neighbourhood assessors. Some of the major responsibilities of these two positions are briefly illustrated in Figure 1.

The coordinator’s primary job will be to supervise a small group of possibly six to ten assessors, and essentially to assume the role of a “team leader”. As head of this team, he/she will supervise work assignments, establish priorities, delegate special tasks, schedule the workload and ensure that all deadlines and commitments are met. Where

required, he/she will also provide the necessary expertise and direction to formulate property groups and neighbourhoods, as well as provide advice on the interpretation of policy and legislative material. As a cautionary note, it should be pointed out that this function must not interfere with the basic autonomy of the neighbourhood assessor. In this sense, the coordinator will have to be continually aware of the need to avoid an inadvertent return to “assembly line assessment”.

As a valuation coordinator, he/she will discuss with the team any problems in obtaining market data. For example, if a neighbourhood assessor has only two sales in a property group, he/she will go to the neighbourhood coordinator, who in turn would supply him/her with additional sales from other neighbourhoods. As an obvious consequence of this job, the coordinator is in an ideal position to co-ordinate the appraisal of unusual properties — in this case “unusual” properties means properties that have very few sales.

As a valuer, he/she will assist the neighbourhood assessor in the appraisal of special or complex properties. Occasionally, he/she will also be required to train new personnel and work with them during their initial period of employment. In the area of quality control, he/she will ensure that values are uniform and consistent from one neighbourhood to the next.

Finally, part of a coordinator’s time will be spent contacting people outside his/her jurisdiction and representing the assessor’s interest in certain areas. For example, he/she will liaise with the assessment services function to channel computer requests or requests for clerical assistance. Where appropriate, he/she will manage contacts with clerks, tax agents and other representatives outside the assessment function.

Valuation duties

The real key to the success of the organization is the neighbourhood assessor whose main task is the development and control of valuation in his/her area. In this capacity he/she will be solely responsible for the assess-

FIGURE 1

Key Positions

NEIGHBOURHOOD COORDINATOR	NEIGHBOURHOOD ASSESSOR
SUPERVISION	VALUATION OF ALL PROPERTIES
Team Leader	Market Data Approach
Scheduling	Income and Cost Approaches
	Neighbourhood Appraisal Report
COORDINATION	FILE MAINTENANCE
Market Data	Sales Verification
Unique Property Analysis	Update and Correct Data
VALUATION	Enumeration
Assistance	APPEALS AND INQUIRIES
Training	
Quality Control	
COMMUNICATION	

ments in his/her area and the various parts of the valuation process: graphical analysis, neighbourhood identification, income and rental analysis, land value calculations, accuracy checks etc.

Depending on the length of the valuation cycle, the neighbourhood assessors will be required to produce, on a regular basis, a Neighbourhood Appraisal Report (see Figure 2). This will contain the following: maps and general descriptions of the area; some of the influences that might affect sale price; property descriptions, particularly for the identification of unusual properties; a summary of the past and present trends in the market; a complete exposition of valuation methods for each property type; a record of all past appeals and inquiries; and quality control statistics and accuracy levels.

One of the best demonstrations of the efficiency of the Neighbourhood Appraisal Report is in an appeal or inquiry situation. Let us assume a neighbourhood assessor is questioned on the amount of the assessment for a particular residential property that he/she valued using graphical analysis. According to this system he/she would go through a number of steps: 1) identify the appropriate property group; 2) refer to the graphical analysis for this group; 3) identify the position of this property on the graph; 4) select appropriate comparables from the graph; and 5) retrieve the comparable sales as pinpointed on the graph. This is a straightforward procedure which can be accomplished on the spot without undue delays caused by exhaustive and tedious file searches. The information is stored in catalogue form readily available at the user's request.

Periodically, the neighbourhood assessor will be asked to participate with other assessors as a member of a property group team. Headed by a neighbourhood coordinator, this group will discuss valuation methodologies for complex properties, resolve common difficulties, develop strategies for court proceedings, devise new and more efficient methods of obtaining market information and generally exchange ideas and problems that would benefit the administration of neighbourhood assessment.

Maintenance functions

Besides valuation responsibilities, an assessor's time will be spent on maintaining an accurate and current record of

all his/her property records. This will include collecting and verifying all sales transactions that occur in the neighbourhood, obtaining income, rental and other financial data, and performing the routine but necessary functions of updating the assessment roll.

Finally, an assessor located in a neighbourhood whose boundaries include or correspond with the boundaries of a municipality will likely have some contact with clerks, tax agents, and other municipal officials. Communication with the public during open house meetings will be another of the neighbourhood assessor's responsibilities.

In summary, by creating the positions of neighbourhood coordinator and neighbourhood assessor in every regional office, we would obviously effect substantial changes in the current administrative structure of this Division. The question is whether these changes are feasible and can be implemented successfully.

Is Neighbourhood Assessment feasible for Ontario?

As mentioned earlier, the majority of regional offices have converted to some form of "geographic" organization. In this context, official recognition has already been given to the fact that assigning job responsibilities by geographic area rather than by function or property type is a more efficient way to allocate the current workload and improve the morale of Ontario assessors.²

However, there are other aspects of the feasibility issue that require further investigation. Does geographic organization create neighbourhood units that are administratively viable? Is the workload of a neighbourhood assessor manageable? Can the current staff fill the job requirements of neighbourhood assessors? And is the market data approach workable?

The Neighbourhood Assessment Project set out to examine these issues in a three-part study. First, an attempt was made to classify the existing regional offices and to choose a sample number of offices that would be considered adequately representative of all. Next, certain information was collected from this sample to permit: 1) an accurate projection of the neighbourhood or geographic structure; 2) an estimate of workload; and 3) a measure of the existing training requirements of Ontario assessors. Finally, the third step was to apply the basic elements of

FIGURE 2

Neighbourhood Appraisal Report	
1. NEIGHBOURHOOD DESCRIPTION	
	HISTORY, DEVELOPMENT PRESSURES, LOCAL BY-LAWS, PROSPECTS
2. PROPERTY DESCRIPTION	
	NUMBER, KINDS, LOCATION
3. SALES HISTORY	
	MARKET PERIODS, NUMBERS, UNUSUAL SALES
4. PROPERTY TYPES	
	VALUATION METHODS
5. APPEAL AND INQUIRY HISTORY	
6. QUALITY CONTROL	
	GENERAL DATA UPKEEP, RELATION TO PROVINCIAL STANDARDS

neighbourhood assessment in a regional office (see the following article. *A Case Study in Durham*). A guiding principle of this entire study was an insistence on the collection of factual information, not the opinions or speculations of a few informed individuals. This is significant in that if this information is interpreted properly, feasibility can be established more conclusively and accepted with a greater degree of confidence by management.

The classification of regions began by obtaining various statistics such as number of properties, property mix, distribution of these properties, complement, roll entries, etc. From an analysis of this information, it was quickly discovered that the existing 31 regional offices can be classified into nine separate categories. These nine classifications appear below:

- | | | |
|--|---|--|
| 1. NORTH YORK
TORONTO
SCARBOROUGH
ETOBICOKE | 2. MISSISSAUGA
OTTAWA
WINDSOR
HAMILTON
ST. CATHARINES | 3. LONDON |
| 4. CAMBRIDGE
YORK | 5. WHITBY
BARRIE
BRANTFORD
GUELPH | 6. KINGSTON
TRENTON
CHATHAM
LINDSAY |
| 7. PEMBROKE
BRACEBRIDGE
BROCKVILLE
CORNWALL
GODERICH
OWEN SOUND | 8. SAULT STE. MARIE
NORTH BAY
TIMMINS | 9. THUNDER BAY
SUDBURY |

For example, Group 1 and Group 2 have approximately the same number of improved properties. However, in the Metro region the properties are distributed quite differently than in either Ottawa or Windsor. The majority of the properties in Group 2 are concentrated in one large urban centre, as compared to Group 4, where they are distributed more evenly.

This classification permitted one office to be chosen from each group with the assurance that the information was representative of the remaining offices. While it is recognized that certain offices with unique problems must be approached individually, it was concluded that for the purposes of this general survey, the information and experience of these nine offices were sufficient to analyse the organizational implications of neighbourhood assessment.

Is Neighbourhood Assessment administratively viable?

Having set the stage for analysis, the first question to answer is whether all assessors can be placed in neighbourhood locations that are administratively viable. More specifically, the questions that frequently arise are:

1. Can the current distribution of properties be divided logically into neighbourhood units whose boundaries are consistent with the existing political boundaries?

2. Will neighbourhood assessment work in urban areas?
3. Does the creation of several neighbourhoods in one region create serious problems of coordination?

It was discovered very early in the analysis of neighbourhoods that there are five basic types in Ontario, regardless of how the assessment regions are subdivided. These are shown in Figure 3 and identified as urban core, urban, rural residential, farm and cottage. Each type is distinguished from the others on the basis of how it corresponds to existing municipal boundaries and the types of properties that are most predominant within each neighbourhood. The property composition is expressed as a percentage of 2000, which is the average number of properties that an assessor could be expected to handle.

To answer the first question, for example, a neighbourhood assessor assigned to an urban neighbourhood will likely administer either a small portion of a city or built-up area or possibly an entire urban centre, such as a small town. A "farm" assessor, on the other hand, would be responsible for an entire township or perhaps several townships including villages.

Decentralization is logical

As the analysis proceeded, it became clear that the municipal structure of this province provides an ideal setting for establishing small geographical units that an assessor can manage under the provisions of neighbourhood assessment. This conclusion was verified by regional personnel who have organized their staffs under "geographics". They have discovered that not only is this form of decentralization possible, but it is a more logical form of management because it defines an assessor's responsibilities more precisely and allows for closer and better control of the local situations.

Regional personnel have had some difficulty in relocating assessment staff in urban areas, particularly those regions which have 'urban core' and 'urban' type neighbourhoods, where they often have to split wards or separate what is thought to be a homogeneous market area. However, some regional commissioners have organized large cities on this basis and believe that such an arrangement is totally workable, provided that there is adequate control of the fluctuating workload and that assessors are subject to relocation as the situation demands.

It is also felt by some that large urban areas, particularly Metro Toronto, Ottawa, Hamilton, etc., contain areas of many complex and special properties that are not amenable to neighbourhood valuation. These include downtown office and commercial areas, industrial centres, and multi-residential communities. While it is still not clear whether these areas can be handled by individual appraisers, their existence should not nullify the creation of neighbourhood assessment over the entire urban domain.

The chart also shows that of neighbourhood types found in urbanized areas, only those assessors located in "urban core" neighbourhoods will be confronted with a major concentration of these complex properties. It is conceivable that neighbourhood assessment may not be the most practical solution for these situations, in that they will have to be examined carefully to ensure an efficient allocation of staff. At the same time, however, the projected distribution of Ontario assessors, as indicated in Figure 3, shows that these core areas represent only 4% of the total complement.

FIGURE 3

Neighbourhood Types

	URBAN CORE	URBAN	RURAL RESIDENTIAL	FARM	COTTAGE
GEOGRAPHICAL UNIT	part of a city ward	ward, all or part of a town	all or part of a town- ship incl'g villages	one or more townships incl'g villages	one or more townships including villages
% RES.	50	85	60	50	50
% MULTI-RES.	3	1	0.5	0	0
% COMM.	38	5	3	1	1
PROPERTY COMPOSITION % IND.	6	1.5	1	0.5	0.5
% FARM	0	0	12	40	10
% S&E	2	2	4	3.5	3.5
% VAC.	1	5.5	19.5	20	35
DISTRIBUTION OF ASSESSORS	4%	58%	10%	12%	16%

Therefore, this minor proportion should not prohibit the formation of neighbourhood units in the remaining sectors of the city where the property composition is conducive to neighbourhood valuation.

Coordination and control

Coordination poses another problem. However, much of this concern has been generated because of the existing organization, which is predicated on a high degree of centralized control in which the activities of managers and assessors are closely monitored. As suggested earlier, the neighbourhood assessor concept insists that each neighbourhood assessor be totally responsible for the development and control of all the valuation activities within his/her jurisdiction. Furthermore, the direct influence of local market conditions often precludes the need for highly systematized valuation controls. As a result, the amount of coordination that would be required is reduced, and its importance in determining whether neighbourhood assessment is feasible for urban situations is minimized.

In conclusion, our analysis demonstrates that neighbourhood assessment can be administered effectively on a provincial scale. The next step is to look at workload and training at the regional level.

The workload of the Neighbourhood Assessor

The feasibility of neighbourhood assessment also depends upon establishing whether the neighbourhood assessor will have sufficient time during the course of a post-reassessment year to perform all the administrative and appraisal duties. As the Assessment Division has never

experienced a post-reassessment year, it is difficult to predict what an assessor's workload might involve.

However, it was decided that these responsibilities will be divided between *maintenance tasks*, insuring that data for properties previously valued is current and accurate, and *valuation tasks*, revaluing all property types within one jurisdiction every year using all available methods. These will probably constitute the major portion of an assessor's workload.

To estimate how much time will be spent on maintenance, several calculations were made, based on the assumption that the amount of maintenance time is a function of the number of properties and the market activity within a neighbourhood. By establishing the activity rate for such functions as sales, supplementaries, 636(a)'s, appeals, etc., we can begin to project an expected workload for maintenance. For example, by dividing the 1974 residential sales total for residential properties in an urban neighbourhood by the total number of residential properties, we obtain the residential sales activity for that neighbourhood. By completing this process for each of the work-generating documents, activity rates for each type of identifiable activity can be produced for each property type in each neighbourhood classification. By applying these activity rates against counts for each property type, workload quantities are produced. Using the same example, in an "urban" neighbourhood the number of residential properties averages 1,650, the residential sales activity is 15%; therefore, the expected quantity of residential sales is 1,650 x 15%, or 245.

Establishing workload quantities for the valuation functions requires less data manipulation because workload

quantities can be equated to the actual property counts. The number and kinds of properties in a neighbourhood determine the valuation techniques and the related tasks that will ensue.

Once these workload quantities have been set for valuation and maintenance functions, the next step is to obtain production rates for each. This was accomplished by surveying managers, assessors, and clerks in regional offices, as well as by referring to the research material from pre-PATO days. These rates, when applied against the workload quantities, indicate the time that would be required to complete the maintenance and valuation tasks for each neighbourhood type. The sum is the total time each year that is required for the successful management of the assigned annual duties.

If the post-reassessment year consists of 40 weeks, the remaining 12 weeks being made up of holidays, sick days, etc., how do the neighbourhood workload time totals compare?

	URBAN CORE	URBAN	RURAL RESIDENTIAL	COTTAGE	FARM
MAINTENANCE	32 wks.	28 wks.	27 wks.	27 wks.	28 wks.
RESIDENTIAL VALUATION	7	7	5	6	6
OTHER PROPERTY VALUATION	12	11	9	11	13
TOTAL WORKLOAD	51 wks.	46 wks.	41 wks.	44 wks.	47 wks.

The chart above for each neighbourhood situation reveals that more than 40 weeks are needed. In the 'urban' neighbourhood, for example, the total is 51 weeks. Furthermore, the individual workload counts dramatically illustrate the proportion of the assessor's time that must be assigned to maintenance; in the urban neighbourhood, maintenance represents more than 60% of the workload total. These figures demonstrate that the assigned annual workload is not manageable.

Assessment valuation cycle

The chart in Figure 4 shows a yearly schedule of the current maintenance functions. These are controlled either by legislation (enumeration, appeals) or by the exigencies of the selling and construction cycles. Of necessity, the assessor's workload conforms to this pattern.

In 7 out of 12 months, more than 60% of the assessor's workload is made up of maintenance activities only. During the month of June, 120% of the assessor's time is being spent on maintenance, most of that time being allocated to duties specifically related to early enumeration. This alone indicates that some restructuring of the workload is required.

With twenty or more weeks required for the performance of the valuation duties, where in the present schedule do they fit? If a reassessed roll is to be returned each year, in accordance with Section 46(1) of The Assessment Act, revaluation would have to be completed by the end of October, as the last update to the assessment roll occurs

between November 1 and November 15. Since the basis of market value is the current real estate market, it is preferable that sales analysis include the bulk of the sales that have occurred during that year. Current data indicate that 55% of the sales arrive on the assessor's desk between May and September. Logically, then, revaluation should occur sometime after, perhaps during September and October. Even if these two months were completely free, revaluation could not be achieved; eight weeks does not correspond to the time required to perform the valuation functions.

Obviously, some restructuring of the cycle must occur. One possible alternative would be to create a one-year time lag in assessments by establishing the year for analysis purposes as the previous year. This would permit rescheduling of the revaluation functions to the less active periods in the cycle. In this way, all sales for the year could be considered and the legislative deadlines for a return of the roll could still be met. Other changes could include staggered reassessment (returning municipality by municipality) or updating

on the basis of sample groups of properties; however, alterations of this nature require extensive examination before they should be considered.

These potential changes notwithstanding, all data lead to the conclusion that neighbourhood assessment is most feasible within the context of a *two-year* assessment cycle.

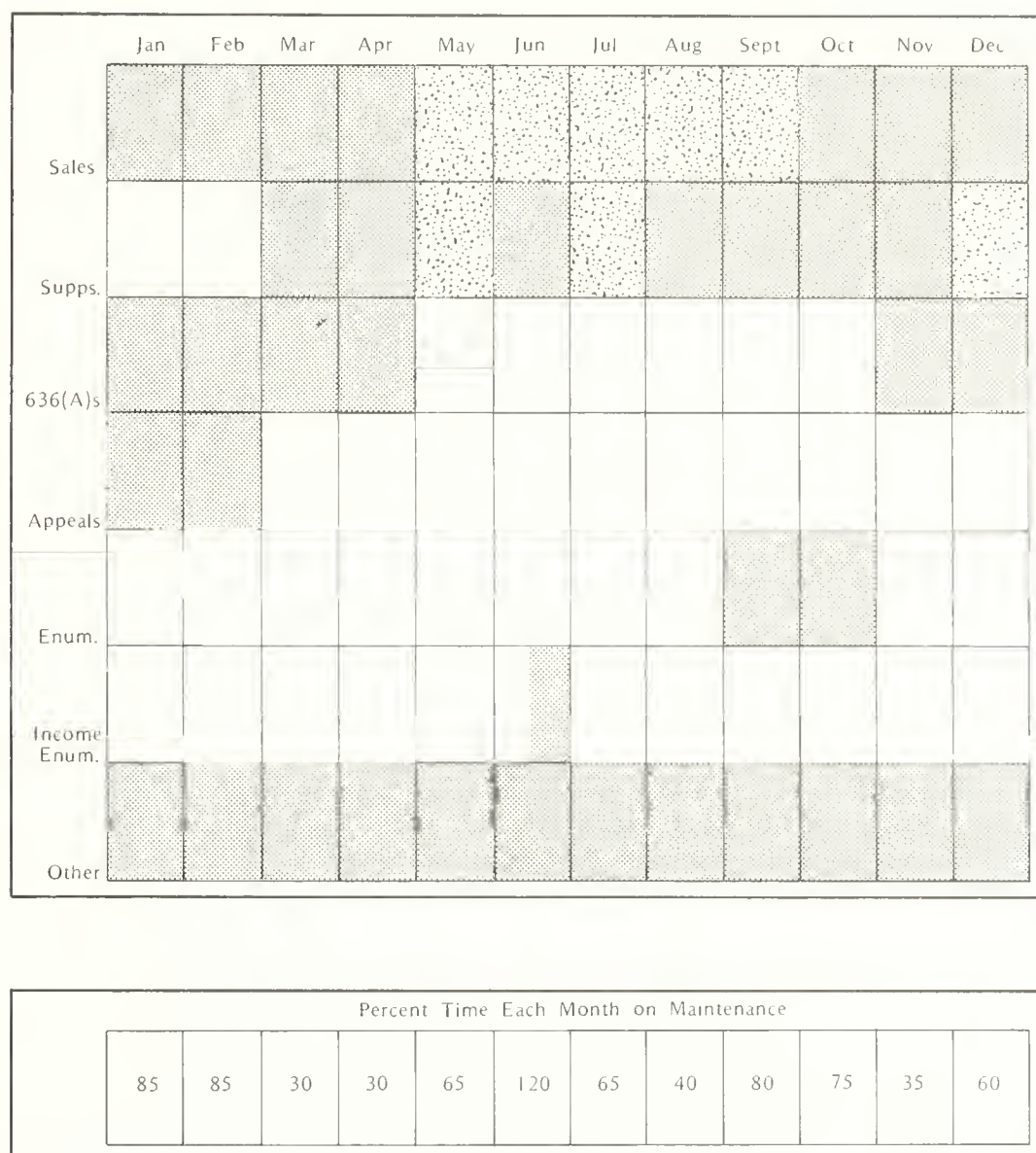
Training Requirements

Neighbourhood assessment suggests that a neighbourhood assessor be assigned to a geographic area and given the responsibility for valuing all property types within that area. The question is whether assessors in regional offices currently possess the skills to maintain and value all properties within a designated neighbourhood.

Of course, the characteristics of a particular neighbourhood will determine the specific skills that are required. However, one assumption that is being made here is that all assessors should be familiar with the valuation methods for each property type. Farms are a possible exception, simply because they are not represented in some neighbourhoods.

Assessment or appraisal skill is related to the degree of training the assessor has received in both the theoretical concepts of appraisal and the actual practical applications in a field or on-site situation. Therefore, a survey was conducted in order to determine how much classroom training provincial assessors have received and how much opportunity have they had to use this knowledge in a working

Figure 4
Monthly Workload
In Urban Fringe
(Maintenance Jobs)



environment. The results of both these studies appear in the chart below (Figure 5). It is divided into four columns:

- Column 1 — lists all the major valuation responsibilities of the neighbourhood assessor.
- Column 2 — indicates the approximate percentage of all assessors (1500) needed to carry out each of the duties listed in Column 1.
- Column 3 — is divided into two parts, one half indicating the current proportion of all assessors that have received training in theoretical concepts, and the other half showing the percentage of staff who have obtained an acceptable level of field experience.
- Column 4 — calculates the percentage difference between the "need" (Column 2) and the "have" (column 3) and, in effect, shows what percentage of assessors require either classroom or practical training.

The purpose of this chart is to illustrate how much training will be required before neighbourhood assessment can be implemented successfully. Column 4 indicates, for example, that neighbourhood assessment requires that

100% or *all* assessors be familiar with the market data approach. Column 3 shows that 80% have received some theoretical training and that only 50% of the total number of assessors have any field experience. This means that 20% will need additional training in market theory, while 50% will require some practical field work.

Another example is commercial valuation using the income approach. From our calculations, all assessors will need to know income methods. The number of assessors having a background in theory is high (65%), but only a small number of the existing staff have had any opportunity to acquire the necessary field exposure in actual income analysis (10%).

In general, then, this chart clearly demonstrates that assessors are, for the most part, adequately trained in the principles of property valuation. What is really needed is an opportunity for them to exercise this knowledge in situations where they have the chance to value all property types.

Conclusions from the Durham Study

In the summer of 1975, this opportunity did arise when our study team was given permission to set up a prototype of neighbourhood assessment in the Durham Regional

FIGURE 5

TRAINING REQUIREMENTS OF ONTARIO ASSESSORS*

all numbers are in percentages

	HOW MANY ASSESSORS REQUIRED?	HOW MANY DO WE NOW HAVE WITH:		HOW MANY REQUIRE TRAINING IN:	
		Classroom?	Field?	Classroom?	Field?
Residential					
1. Market	All	80%	50%	20%	50%
2. Cost	All	90	85	10	15
Multi-Res.					
1. Cost	75	75	30	none	70
2. Income	75	65	5	35	5
Commercial					
1. Cost	All	75	30	25	70
2. Market	All	65	10	35	90
Industrial	90	70	20	30	80
Farm	50	60	20	none	30

*As of May, 1975.

Office. This experiment, involving four assessors from the same office and lasting approximately two months, gave every indication that neighbourhood assessment is feasible. This is amply demonstrated in the following paper, in which the valuation results are presented in detail.

Not only did this study prove that most assessors are capable of valuing most properties with a minimum of training and supervision, but it also confirmed some other aspects of neighbourhood assessment that were originally revealed at the provincial level of analysis.

First, it reinforced the fact that the assigned workload is not manageable within a one-year period. This conclusion was based on a time study where three assessors were given the responsibility of producing market values for all properties in their neighbourhoods. They were asked to monitor closely the time spent on each of the procedural steps associated with the valuation process. On the basis of the study they were able to complete, they projected how much time would be required to revalue fully and maintain all properties. To supplement this field data and to insure that all neighbourhood types were adequately represented, several other assessors from the Durham office were approached and asked a series of questions pertaining to the time requirements of the maintenance functions only. With full knowledge of their neighbourhoods, the types of properties and their activity, the assessors calculated their workload projections.

In all cases, workload estimates totalled between 70 and 80 weeks. Although these projections almost double the original estimates, the assessors generally agreed that once familiarity with their neighbourhoods were achieved, these estimates could be substantially reduced to fall into line with the earlier 40-50 week predictions.

In any case, the above analysis demonstrates that it would be unrealistic to expect the neighbourhood assessor to perform all assigned duties during the course of one year unless certain changes were to occur. What kinds of changes would make the neighbourhood concept and its assigned workload feasible?

If assessors are given full access to the Valuation File, permitting computer-assisted data preparation and analysis for residential, farm and vacant land, a time saving of six weeks can be expected. This reduction would seem to put a one-year cycle within reach. However, this assumes that the workload is evenly distributed throughout the assessment year. As mentioned earlier, it was calculated at the provincial level that the workload is not evenly distributed and should be stretched out over a two-year cycle. Assessors from the Durham office agreed with this decision, but felt that a one-year cycle may be possible once the neighbourhood assessor has become more familiar with his/her surroundings and more acquainted with the range of duties.

Flexibility of the Market Approach

A second development from the Whitby study involved the use of the market data approach. This technique had already proven itself to be a very efficient and accurate appraisal method in eleven urban areas of the province. Therefore, as expected, the superiority of the market data approach was confirmed in the Durham project. The three assessors assigned to specific areas found that the flexibility of the market approach permitted them to adopt their valuation strategy to the particular conditions in their neighbourhoods and to arrive at values that were truly indicative of the local market. Conversely, the assessors' familiarity

with the real estate market, zoning ordinances, development plans, and various other locational factors affecting value was crucial to understanding the intrinsic features of the market situation.

The actual valuation methods that were employed and proved successful included: graphical market approach for residential properties; gross income multiplier for multi-residential; market analysis of land plus the cost of improvements supplemented by a market rent multiplier for commercial properties; cost estimate supplemented by a market rent multiplier for industrial properties; market analysis with the aid of maps for vacant land; provincial cost manual for special and exempt; and Section 27(3), supplemented by a market approach using maps and graphs, for farm properties.

In applying the graphical technique using residential sales, assessors found the current file of sales particulars insufficient for a proper verification. Since this method relies solely on the use of sales, assessors concluded that it is imperative that the following items be made available to neighbourhood assessors for all sales: the date the offer for sale is accepted; the closing date; the date of possession; the relationship among participants in the transaction; and any financing details.

The information available for the analysis of income-producing properties also proved to be inadequate. This was attributed to the current method of collecting this data and to problems in using the existing income questionnaires. The assessors in the Durham office would prefer that all future income material be collected by each individual assessor on a neighbourhood basis, using a suitable form and over a reasonable length of time. In addition, only those properties which can truly be classified as income-producing should be approached.

A final word about the market data approach. The assessors involved in the Durham project agreed that the neighbourhood assessor must have full access to all sources of market information. Besides the conventional sources that are available, an assessor should have direct communication with the real estate industry and other appraisal

firms, as well as access to all relevant real estate periodicals and daily papers. This material, compiled in a market data catalogue for each neighbourhood, would ensure a continual surveillance of market evidence and would also provide a convenient reference. Such a compilation would be invaluable in familiarizing a new assessor with that area.

A beneficial change

This article has tried to demonstrate the feasibility of neighbourhood assessment. It has done this by choosing certain aspects of the organizational problem that would be most influenced by this restructuring of assessment personnel. These have included areas of personnel, administration, workload, training, and the use of the market data approach. Before the full effects of neighbourhood assessment can be recognized, there are many other changes that must be anticipated. But we believe that we have uncovered enough evidence in this study about the nature and direction of these changes to conclude that neighbourhood assessment, if implemented, would be a logical and beneficial approach to achieving market value.

Successful implementation also depends on the overall acceptance of neighbourhood assessment by regional personnel as a beneficial change in their current positions. Past surveys indicate that the majority of staff will accept decentralization as a progressive step and would welcome the opportunity to show that as potential appraisers, they are quite willing to and capable of absorbing the increased responsibilities of a neighbourhood assessor.³ At the same time, neighbourhood assessment will undoubtedly relieve much of the frustration and disappointment that assessors have experienced in the past during a lengthy and tedious reassessment period.

FOOTNOTES

¹ See *Aspects* #16, "Mr. Gillis speaks on Geographics", p. 32.

² See *Aspects* #18, "Geographics: Alive and Well in Niagara," p. 2.

³ *Aspects* #13, "G. Day 1974: A Survey of Reactions to Geographical Assessment", p. 2.



A Case Study in Durham

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Introduction

This study in the Regional Municipality of Durham was a six-week project involving four property assessors from the Whitby office. Its main purposes was to place market value assessments on a variety of property types in each of three neighbourhoods, employing any appraisal methods deemed appropriate. The value estimates were for late 1974 and where possible, market information from the last six months of 1974 was considered. Shortages of sales for some types of properties required that the time period or market area — or both — be enlarged to supply more adequate market data.

A total of four days of additional training was received by the assessors involved: one day each on graphical analysis and industrial costs, and two days on income properties.

In attempting to discern the market value of a property, the most logical information source, naturally, is the real estate market. The information found here might be direct, as in the comparison of the market prices of properties, or indirect, as in the deciphering of leasing arrangements or the establishment of the effect of municipal land use zones as indicators of value. In any case, the most straightforward and verifiable method of arriving at a property's market value is through some version of the market data approach; consequently, where conditions allowed this was the method employed in the Durham neighbourhoods.

The analysis usually took the form of the graphical sales technique: plotting sales on a graph opposite certain tentative independent variables to establish and weigh those factors which might affect market value. Although this approach was not an exhaustive solution to the countless problems which will have to be confronted if market value assessment is to become a workable tax base, it did isolate important relationships which can in fact be employed toward this end.

Residential properties account for the largest number of properties in the province and, by virtue of their numbers alone, have the most sales activity and the most homogeneous groupings. So this was the starting point for the project.

We borrowed from the experience gained in previous studies in determining which factors usually have the most direct effect on sale price. These were used as a guide and a jumping-off point for grouping comparables. And, as one might expect, it was with this property type that we had the most success because the market behavior was most predictable, even in the rural area. However, the rural neighbourhood posed some unique problems which will be examined later.

An attempt was made to look at as many property types as possible within the allotted time. Unfortunately, many types had to be passed over or approached with a tentative solution which would have to be refined for actual use. In all cases, however, every available sale was analysed, at least cursorily, in an attempt to isolate those factors which might affect value.

Because exempt and special purpose properties are seldom offered for sale, they have no real or potential market value. The most realistic way to approach these properties, then, would be to employ building cost (the provincial manual or actual construction costs) plus market land value to indicate an upper limit. These properties were not directly considered in the project; and similarly, due to the lack of industrial sales information in the three neighbourhoods, and the questionable conditions surrounding the few available sales, the cost approach was accepted for the present as the most suitable approach for industrial properties. There was some investigation into actual industrial construction costs in an attempt to relate these to the existing cost manual, but the lack of time cut this exercise short.

Considering the subjective nature of market value and the severe time constraints associated with the project, it can be said that the results were very acceptable; for accuracy, speed, and ease of application, market methods compared favourably with the current cost method. We should add, however, that in many cases it was felt that further refinements in research and application would yield even more favourable results.

The three Neighbourhoods

The three neighbourhoods were selected from three of the assessors' normal work areas and were tailored to make fairly homogeneous market areas which could be handled by an individual assessor. (See Figure 1.) Two of the neighbourhoods were categorized "urban residential", the third "rural residential". These titles become fairly evident when the neighbourhood size and property counts are observed. (See Table I.)

The sales and property counts have to some extent been approximated. From the time an offer to purchase is accepted to the time the deal is closed and the deed registered, a six-month time lag might normally occur. The property counts were extracted from Standard Assessment System printouts, and so unit class counts had to be reduced to property counts. These were estimated by taking

sample selections of unit class and counting the actual equivalent properties.

In many instances the two urban areas were treated similarly and the results compared; at other times they were combined for greater confirmation in the treatment of certain property types. The greater abundance of sales alone allowed for more satisfactory results whatever the exact method of analysis — graphical analysis, sales averaging, etc. It was probably the rural area which posed the most problems. Its size (about 120 square miles) and the limited sales activity hindered market comparisons. These conditions, plus the greater number of potential value-influencing factors in such a large and much less uniform market area, required that the assessor have a fairly extensive knowledge of his or her specific area. Price differences could be rationalized, and a tentative value applied from existing records; however, more emphasis was placed on quality control and finalization of values at the field level.

Urban Residential Neighbourhood Valuation

Single-family residential properties
in Oshawa and Whitby

After the initial extraction of bona fide open market residential sales from office data, it became apparent that

FIGURE 1

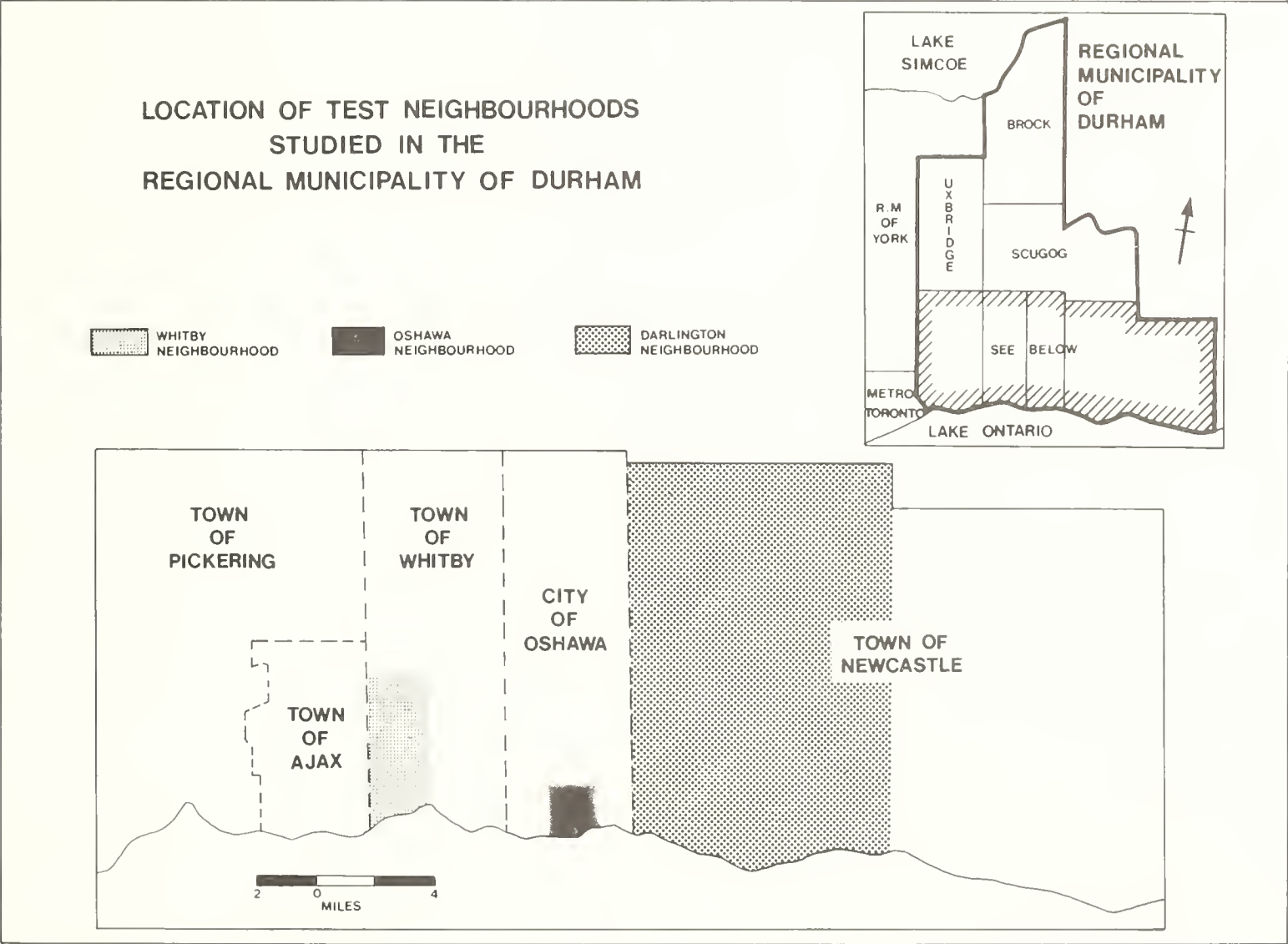


TABLE I
THE THREE NEIGHBOURHOODS IN DURHAM

	OSHAWA	WHITBY	DARLINGTON
GENERAL DESCRIPTION	Location	(See map, Figure 1)	
	Area (sq. miles)	3.5	9.25
	Neighbourhood Type	Urban	Rural Residential
NUMBER OF PROPERTIES	Residential	2320	2051
	Multi-Res.	25	7
	Commercial	92	60
	Industrial	39	8
	Farm	0	38
	Special and Exempt	75	31
	Vacant Land	266	329
NUMBER OF SALES	Residential	358	123
	single-family	317	91
	duplexes	6	7
	triplexes	3	1
	fourplexes	2	1
	condominiums	30	23
	Multi-Res.	29	9
	Commercial	1	0
	Industrial	0	1
	Farm	0	0
	Special & Exempt	0	0
	Vacant Land		
	Res. single	26	6
	Res. semi	10	0
	Large hold's	2	5
	Multi-Res.	3	1

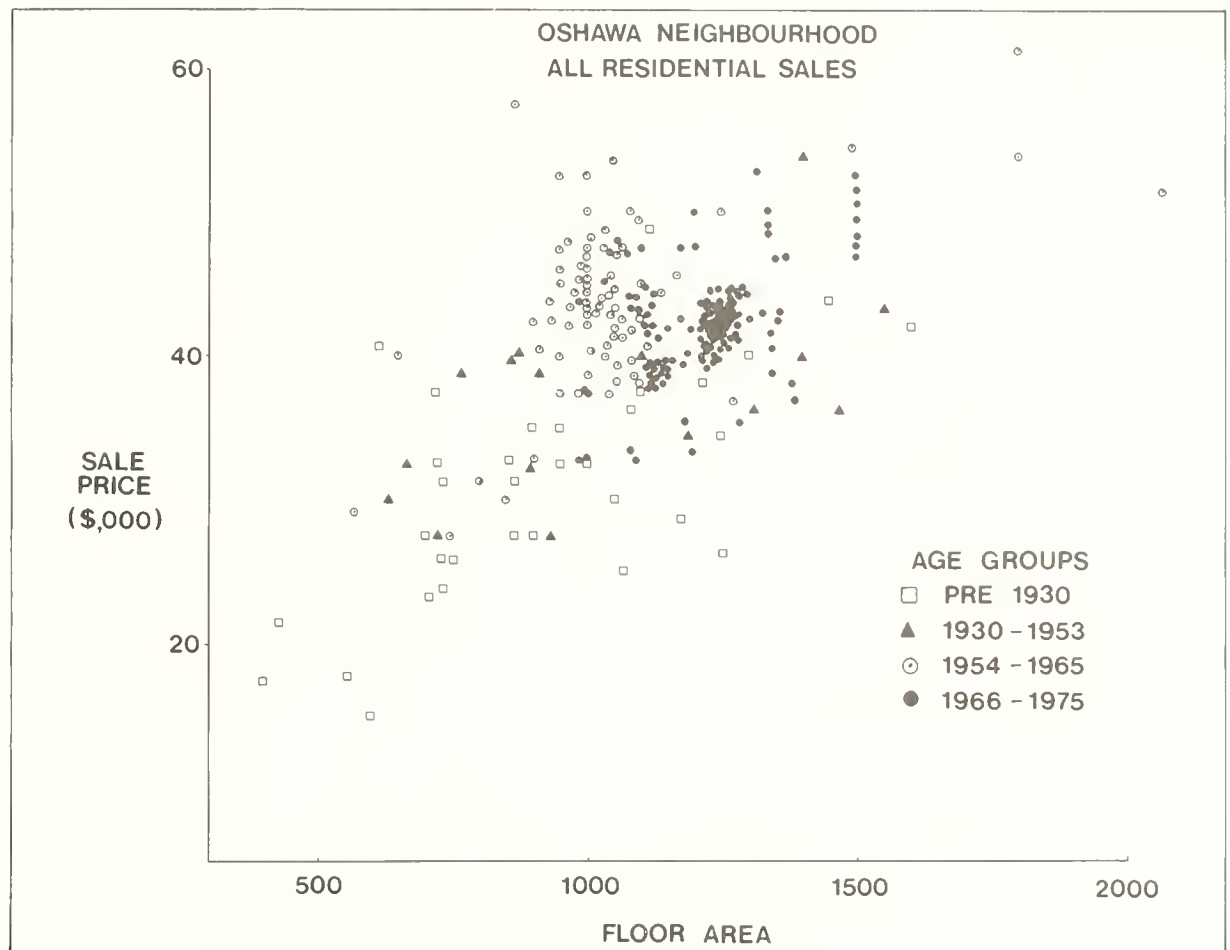
some sense of order or organization must be imposed before presenting the statistical information in a graphical format. In the Oshawa and Whitby neighbourhoods, this formalizing process became a matter of tentative segregation of the homes into time periods designated by the date of construction.

An examination of housing in the Oshawa neighbourhood produced four distinct temporal divisions into which the majority of structures could be placed. Since a marked increase in residential construction had occurred in this area in 1966, and was still continuing, the period extending from 1966 to the present became the first division. The second division was chiefly comprised of standard National Housing Act-style bungalows constructed between 1954, the date of the N.H.A.'s inception, and 1965. A brief investigation of wartime and depression housing in the Oshawa

neighbourhood led to the belief that all such homes could be effectively grouped into a third category: homes built from 1931 to 1953. The remaining homes, all pre-1930, became the fourth and final classification.

Since previous work indicates that most of the accuracy represented by a market value estimate of a residential property is established once the age and square foot area of the structure are accounted for, it was decided that the next step in the graphical approach to value would be the production of a master graph which married these two elements, plus sale price, into a graphical, diagrammatic overview of the residential properties in each of the neighbourhoods. (See Figure 2.) Different symbols were employed to designate the various age groups. The graph depicts 358 sales which occurred in the Oshawa neighbourhood during the prescribed market period, June 1974 to March 1975.

FIGURE 2



The clear separation of age groups on the graph and the minimal amount of overlap verifies and substantiates the construction periods which were, until this point, merely tentative. Furthermore, the period 1931-1953 is identified as a problem area. The symbols depicting sales of these homes fail to dominate a specific region of the graph, thus indicating a wide variation in sale price and a possible shortage of acceptable sales data. Indeed, both these hypothesized explanations proved to be quite true, eventually precipitating a search for sales of depression and wartime housing *outside* the Oshawa neighbourhood. Obviously, such a procedure is only recommended in those cases in which it is deemed absolutely necessary, due to an acute lack of sales in the specified area. In this instance caution should be taken to venture as short a distance as possible from the valuation neighbourhood, selecting an area as similar to the subject neighbourhood in property make-up and general socio-economic climate as can be achieved.

Oshawa neighbourhood: houses built from 1954 to 1965

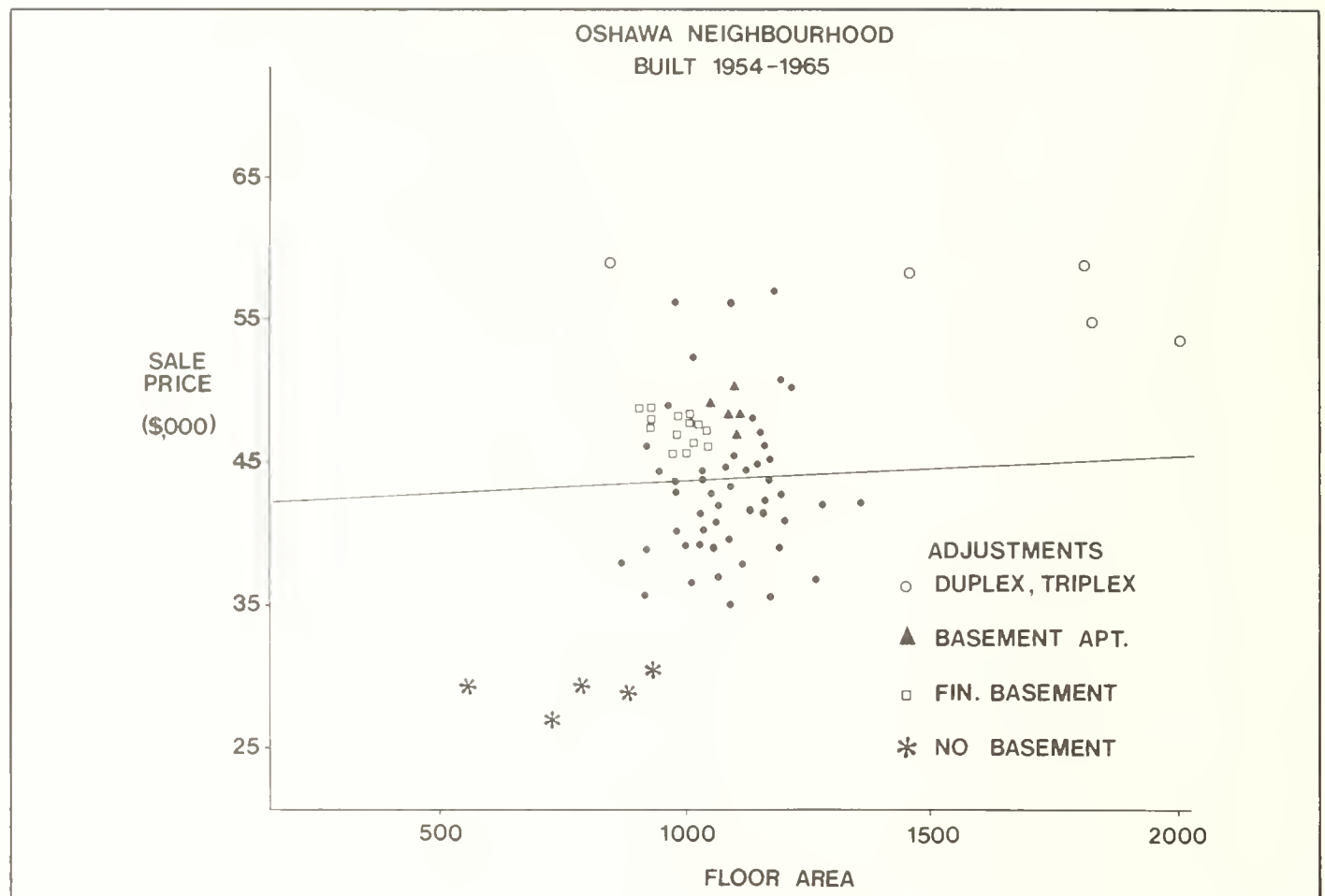
By this time we were prepared to isolate each housing period, produce the sales in an individual graphical format, and begin the actual valuation process of formulae extraction and application. The sales of homes constructed in the period 1954-1965, for example, were reproduced on a graph identical in design to that which was depicted earlier. (See Figure 3.) The value line was then introduced and the ten percent accuracy parameters calculated and subsequently charted. A rigorous analysis of each sale was then begun. Essentially, we were investigating the reasons why some sales fell above the line, others drastically below. Why, for example, should we not have been confronted

with a more tightly organized cluster of coordinates, as some might have anticipated?

Such was our immersion into the highly volatile, unpredictable world of the real estate market that lies beyond the intellectual confines of dogmatic appraisal theory and cost manuals. The effects of building age and square foot area on value are proven and accepted, but what of the other familiar variables? Each in turn was examined and evaluated as it pertained to each property for which an open market sale was graphed. Character of construction, presence of fireplaces, number of washrooms, garages, lot frontage, specific neighbourhood location, number of bedrooms, finished basements — all were analysed in an effort to weave something logical from the relatively chaotic graph with which we were confronted. But the only elements for which purchasers tended regularly to pay more money were basement apartments and finished basement areas in excess of 200 square feet! Similarly, the graph indicated a consistent reluctance by home buyers to pay as much for a 1950's bungalow with no basement, than for one thus equipped. This stress on basement detail is quite logical when one considers the one-storey style and limited floor area of such structures. But again, the astounding fact emerged that *none* of the remaining elements to which one attributes an increase in value in the cost approach actually had any visible market effect in the residential sector of the real world.

The sales analysis now complete, it was necessary only to extract the basic formula represented by the square foot/sale price relationship, and then to calculate the appropriate adjustments for basement detail. It must be pointed out that these formulae are "extracted" rather than imposed; we allow the graph to speak, to dictate what has occurred

FIGURE 3



in the marketplace, while we merely record the observations as a mathematical relationship. The graph, for example, suggests a rise in sale price from \$42,750 to \$44,250 for homes ranging from 850 square feet to 1,300 square feet, respectively — a square foot increase of \$3.33, a rather astounding statistic that refutes many of the common square foot/value relationships expressed in the textbooks. It should be remembered, however, that this relationship is merely a mathematical statement supported by the market activity of a specific type of house, in a specific area of a specific municipality during a specified market period. Obviously, the same relationship could not be expected to exist in Toronto or, say, Kapuskasing. The wise man, however, proportions his beliefs to the evidence, and the following basic formula was thus accepted and recorded as the basic value statement for all homes constructed between the years 1954 and 1965 in the Oshawa neighbourhood:

VALUE = \$42,750 + \$3.33 P.S.F. over 850 square feet

The individual amounts by which the homes with finished basements and basement apartments exceeded the value line were then totalled and averaged, the same process then being applied to the homes lacking basements. This operation yielded the following formula:

VALUE = \$42,750 + \$3.33 P.S.F. over 850 square feet + \$3,600 if finished basement + \$4,500 if basement apartment — \$14,000 if no basement

Adjusting the 10 percent accuracy parameters to accommodate the suggested allowances for basement condition, 54 of the 74 total graphed sales of single-family dwellings fell within 10% of actual sales, producing an accuracy per-

centage of 73%.* The application of the formulae to the unsold properties is now a simple clerical exercise that can be completed in a matter of hours. Indeed, nearly 500 such properties in the Oshawa neighbourhood were valued in slightly over one day, the only exceptions being homes of this time period that were architecturally designed, or displayed abnormal depreciation or renovation. A mini-roll indicating the values of all homes from this classification located in the Oshawa neighbourhood was thus produced, providing at the same time the means by which these market value assessments might best be defended in court. Many judges or chairpersons will question in some depth the validity of market values achieved through the machinery of cost; few will challenge the acceptability of evidence based on market data presented in a logical, rational manner by a professional, armed with charts and sales graphs that alone will adequately speak for his or her appraisal expertise.

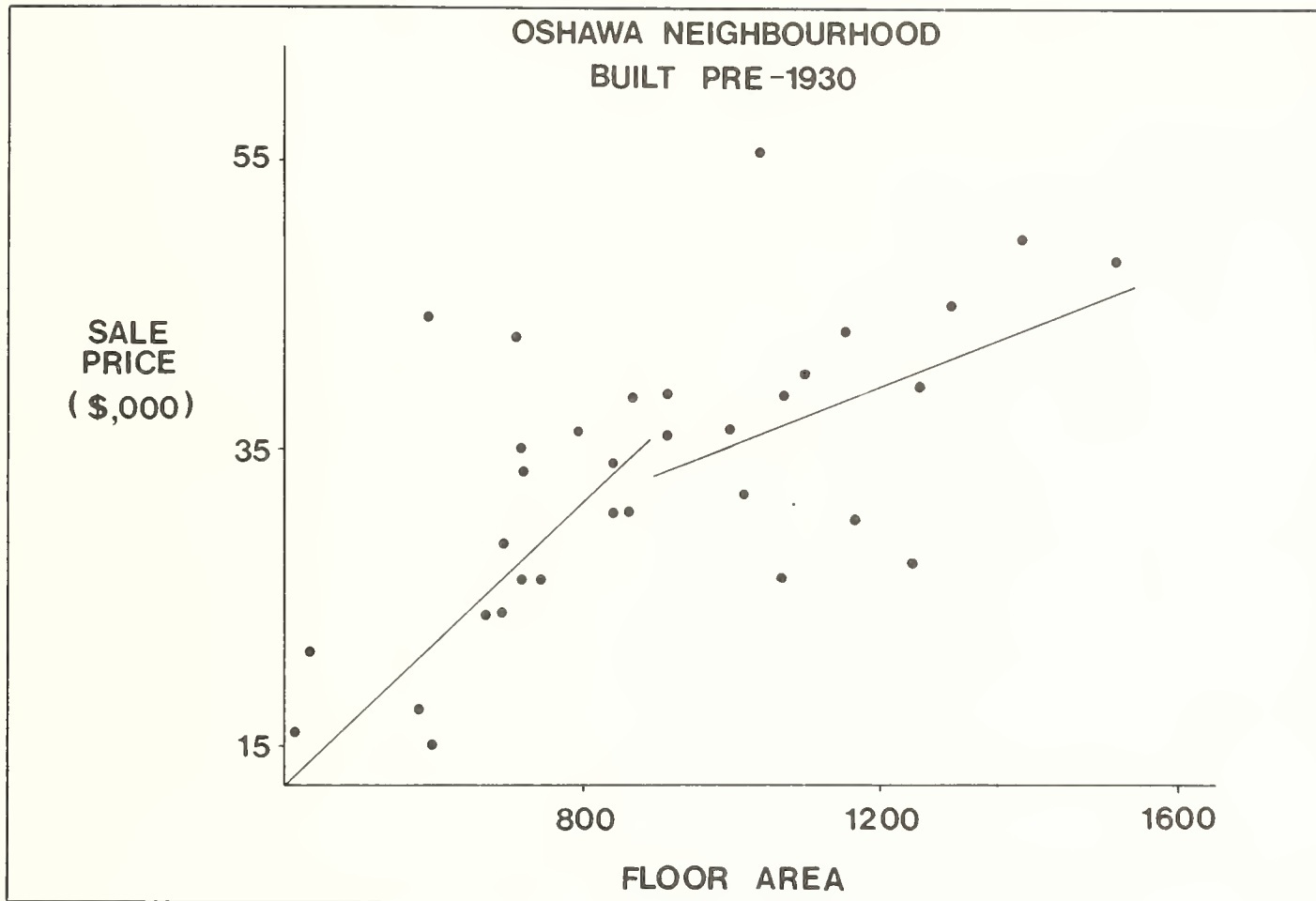
Oshawa Neighbourhood: houses built before 1930

It is interesting to observe that the older the residential structure, the more elusive and nebulous becomes the concept of market value. Older homes thus represent a unique problem to the assessor. Obviously, there is no method by which the assessor can measure and ultimately account for the multitude of opinions and variety of personal tastes which interact so inextricably with the market for this particular property type. The accuracy of market value estimates of such residences must, therefore, inevitably decline.

The pre-1930 homes in the Oshawa neighbourhood may be offered as a case in point. The sales of these properties were isolated from the master graph and reproduced on an individual graph identical to those illustrated previously. (See Figure 4.)

*The duplexes and triplexes are included on the 1954-1965 graph only to illustrate the way in which the graphical approach isolates these structures from single-family dwellings. The valuation of duplexes and triplexes is discussed at a later stage.

FIGURE 4



The relatively wide spread in square foot area and corresponding value is evident. It was apparent that the accuracy rating would not be equal to those previously achieved. Again, the usual variables assumed to be determinants of value were analysed as they pertained to each sale. Only the quality class of these structures, however, emerged as an element definitely affecting market values! And this, it appeared, could only be related to the smaller homes anyway, thus once again reducing the value statement to a mere relationship of floor area and sale price.

Quality and condition, it appears, are therefore more subjective, arbitrary judgments than some might expect. Graphical analysis demonstrates implicitly, if not explicitly, the inadequacy of the current cost-oriented quality classification system in the real marketplace. Except in extreme cases, home buyers do not tend to differentiate too thoroughly between the respective qualities and condition of their prospective purchases. It might be argued that homes could be reclassified into the categories "good", "average" and "poor", rubrics intended as a combination quality/condition rating. It appears, however, that this step should be performed only as the last segment of analysis, after the effect of the usual variables on market value has been thoroughly examined. Quality and condition, it would seem, are inextricably connected with size and age, a hypothesis explicitly supported by the residential market data collected during this project.

The formulae, therefore, extracted from the pre-1930 graph are as follows:

VALUE =

A. \$12,500 + \$46 P.S.F. from 400 to 899 square feet

B. \$33,000 + \$20 P.S.F. over 900 square feet

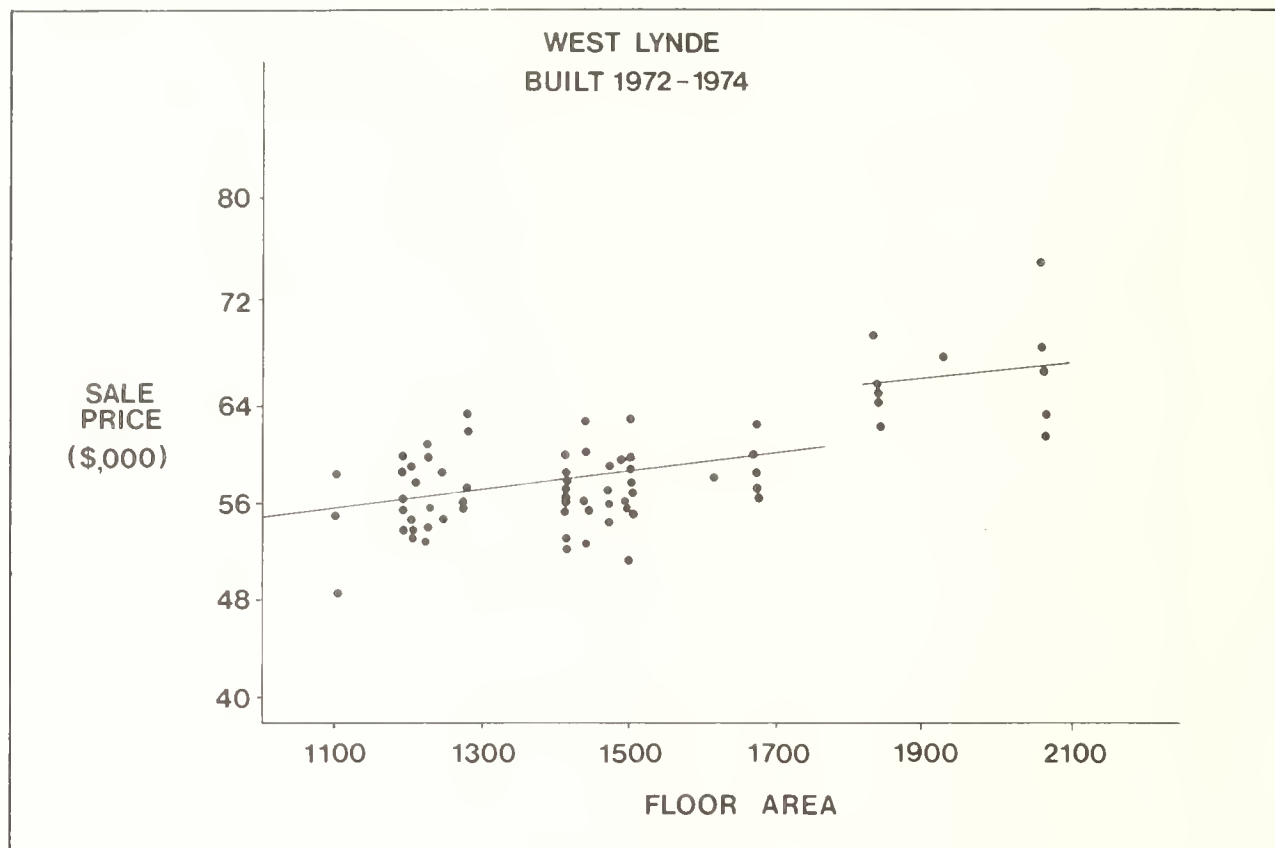
Of the 18 graphed sales, 9 fell within the 10% limits in formula A, yielding an accuracy percentage of 50. The accuracy percentage for formula B was 47. As was the case with homes of the 1954-1965 period, it was determined that structures exhibiting extreme depreciation or renovation should be dealt with on an individual basis.

The valuation formula for each of the two remaining time periods in the Oshawa neighbourhood was calculated in the same way as that previously described. The accuracy rating for the contemporary structures was a remarkable 98%, while that for the wartime and depression housing was a still impressive 77%. Again, the older the residential property, the more elusive and subjective becomes the concept of market value.

Whitby neighbourhood: houses built from 1972 to 1975

The graphical analysis method of the market data approach therefore provided astonishingly accurate residential value estimates for mass appraisal purposes. As suggested previously, the method simultaneously constructs the means by which these assessments might best be defended in court. Many of the values attained were verified by comparing the asking price of a residential dwelling listed "For Sale" at the date of valuation, to our estimate of value achieved through the application of the appropriate formula. In most cases it was apparent that none of the familiar variables assumed to affect value in the cost manuals had any influence over the sale price when these sales were subjected to analysis. This point is emphatically

FIGURE 5



driven home in the graph produced for the West Lynde subdivision in the Whitby neighbourhood. (See Figure 5.)

This example produced an accuracy rating of 94%. The West Lynde subdivision is a truly homogeneous market area, comprised of some 878 single-family dwellings built during the period 1972 to 1975. All sales from the developer to first owners were discarded. Large variations in price for identical models sold in the same month on similar lots could not be rationalized satisfactorily. The graph merely relates the sold properties by floor area and sale price. The basic models can be identified readily on the graph, emerging as the vertical coordinate clusters at specific floor areas.

The West Lynde graph is thus an especially interesting example of sales analysis. It suggests that in this specific market area, garages, recreation rooms, fireplaces, swimming pools, etc., have no discernible effect on the dollar value that a property will command. It is difficult for us, as assessors, to accept this as a realistic example, since we have become accustomed to rating such variables as garages and porches as value additives during the past five years.

The graphical evidence is thus plainly exhibited. In this specific example, various elements assumed to be value additives were isolated and graphed in as many combinations as possible, yet no pattern developed. Even the down payments and financing at the time of sale (within the six-month period) appeared to have no consistent effect on price. In cases such as this, where graphical analysis indicates that sale price and floor area are the only determinants of value, it is suggested that the sale prices for each model might simply be averaged in order to yield the same results.

Condominiums, duplexes, and triplexes

As the West Lynde situation indicates, it is often quite acceptable merely to average the available open market

sales of like properties in specific areas, when it can be shown that no other variables are consistently working to affect value. This, for example, was the method employed to value all condominium apartments and townhouses in the Oshawa and Whitby neighbourhoods. In each case, the initial sales from builders to first owners were discarded due to the frequent discrepancy between the actual sale date and the date the sale was registered. Indeed, it should be remembered that first sales of condominiums are often indicative of a market value applicable months before the date listed on the deed, thus rendering the sale useless for analysis or valuation purposes.

It is suggested that neighbourhood assessors select a benchmark townhouse and apartment development, employing such variables as style, quality, layout and common elements as factors for consideration. The remaining condominiums in the specific neighbourhood might subsequently be related to these standard properties. This information, supplemented by relevant market data, should lead to an accurate, easily substantiated market value assessment of each condominium property for mass appraisal purposes. Approximately 750 condominium townhouses and apartments were valued in the Oshawa neighbourhood in one day using the described technique.

This same sales averaging method was employed to provide a value for non-converted duplexes and triplexes in both the Oshawa and Whitby neighbourhoods. In Oshawa, for example, six open market sales of duplexes occurred during the prescribed market period, offering a range of \$52,150 to \$57,900. These duplexes were all of the one-storey/finished basement variety, thus allowing the simple averaging of sales and subsequent establishment of \$55,190 as a suggested market value assessment. It is indeed interesting to observe that the same valuation method for similarly styled duplexes in the Whitby neighbourhood yielded a final value estimate of \$55,300, suggesting a

remarkable consistency in the pricing of this particular housing commodity from Oshawa to Whitby.

Seven sales of two-storey non-converted duplexes with basements in the Whitby neighbourhood yielded a final value estimate of \$60,500 for this duplex type. Non-converted triplex sales extracted from the two neighbourhoods produced figures ranging from \$63,000 to \$68,000, for a value estimate of \$65,700. It should be remembered that all *converted* duplex or triplex structures should be treated individually according to the degree of conversion and renovation to which each has been subjected. It might be suggested, however, that the values of similarly styled single-family dwellings in the immediate vicinity might be employed to ascertain a preliminary upper and lower limit assessment, thus forming an important "square one" upon which subsequent theory and calculations can be based.

Vacant land

The sales averaging technique was applied in a similar fashion to produce market value assessments for most individual lots of vacant land, as well as large acreage parcels. A survey of twenty-six Oshawa neighbourhood open market sales of fully serviced residential lots, for example, yielded consistent and auspicious results. After methodically evaluating the ultimate value effect of such variables as frontage, depth, shopping centre and school proximity, zoning, etc., it was determined that no forces appeared to act in a consistent fashion to affect the ultimate selling price. Lots designated for semi-detached construction (23' FR. — 35' FR.; 110' — 160' DP.) were, therefore, valued at \$19,000 as of the valuation date, a figure achieved by averaging available sales. While it would seem unusual to provide a value for individual lots reserved for the construction of one semi-detached unit, a sufficient number of such sales existed to warrant treatment on this basis.

Lots designated for detached construction (40' FR. — 60' FR; 120' — 220' DP.) realized an average of \$32,000 on the open market during the same period in the Oshawa neighbourhood. The Whitby neighbourhood produced a variety of sales of lots ranging from 49 feet to 75 feet frontage, and 118 to 146 feet depth. Sale prices ranged from \$28,000 to \$31,000, with absolutely no correlation exhibited with frontage, depth, specific location or any other discernible factor. The market value assessment for such lots was, therefore, established at \$29,500.

It is apparent that lots of unusual proportions which lie outside the suggested frontage and depth limits should receive individual attention, employing the known values as a logical starting point. Rigorous field quality control of all lots should provide other examples of lots requiring special treatment or possible minor topographical or similar allowances.

Seven sales of large parcels of vacant residential land in the Oshawa-Whitby area were examined in order to produce an acreage rate to be applied against the total acreage of each tract. Again, no central factors appeared to affect the ultimate value, either singly or in unison. The sales, therefore, ranging in price from \$59,011 per acre to \$66,730 per acre, were averaged to yield a final value estimate of \$64,230 per acre for unserviced, raw residential land. Again, it is recognized, of course, that all such large holdings should be personally visited by the assessor involved, thus ensuring that no unusual factors exist which may seriously affect the proposed market value assessment.

Values for vacant industrial and commercial land were derived in a similar fashion; in this case they were combined

with the observations of land acquisition officers from both the municipal and regional governments.

MULTI-RESIDENTIAL PROPERTIES

Potential use as a value indicator

It is evident that developers intending to construct high-rise or multi-residential developments are most concerned with zoning regulations and permitted use. Indeed, research indicates that this cognizance goes far beyond elementary facts and rudely-conducted investigation. As part of the valuation process, therefore, an effort was made to determine the way in which developers make an investment decision when purchasing land for such purposes. An examination of an October, 1974 sale of R-3 land in the Oshawa neighbourhood, for example, yields a number of conclusions.

The developer bought the land, 5.64 acres located on the east side of Oxford Street in Poll 2, in October of 1974. The total sale price was \$965,000 or \$171,099 per acre. At this point, the zoning and building regulations governing multi-residential development for R-3 land were examined: B/L 29-67 18A.

"Notwithstanding anything hereinbefore or hereinafter contained no person shall erect any apartment building unless the following regulations regarding lot area are met:

In R-3 Zones the minimum size of the lot shall be:

6,000 square feet for the first 5 dwelling units or less regardless of the number of bedrooms contained in each dwelling unit,

together with additional lot area for each dwelling unit in excess of 5 as follows:

900 sq. ft. for each additional bachelor unit
1,000 sq. ft. for each additional 1 bedroom unit
1,275 sq. ft. for each additional 2 bedroom unit
1,550 sq. ft. for each additional 3 bedroom unit

together with an additional 275 square feet of lot area for each bedroom in any dwelling unit (except those included as one of the 5 units permitted on a lot of the minimum size) in a dwelling unit containing more than 3 bedrooms."

This information was combined to make the following computation of the value of the potential zoned use of the land. The total square foot area of the subject property is: 5.64 acres x 43,560 (no. of sq. ft. in 1 acre) = 245,678 sq. ft. The zoning regulations allow the developer 6,000 square feet for the first five units, and taking two-bedroom apartments as the norm, 1,275 square feet for each unit thereafter. The land in this case will therefore accommodate a total hypothetical unit count of:

$5 + [(245,678 - 6,000) \div 1,275] = 5 + 188 = 193$ Potential Units.

We can therefore hypothesize that the developer paid $\$965,000 \div 193 = \$5,000$ per potential unit for raw R-3 land.

This same thesis was further substantiated by examining sales of similarly zoned land in the town of Ajax. The first sale was of 14.93 acres for \$2,991,800. An examination of the local building regulations led to the calculation of a total hypothetical potential unit count of 595, or a sale price of \$5,028 per unit. Another example yielded the figure of \$5,040 per hypothetical potential unit as of the valuation date. It was therefore determined that the market value of land zoned for high-rise development in the Oshawa neighbourhood was to be equal to \$5,000 times the

potential number of hypothetical units as designated by local by-law requirements. This thesis is further discussed and substantiated in the following section dealing with the gross rent multiplier and the valuation of multiplex and high-rise structures.

Potential income as a value indicator: Gross Rent Multiplier for multiplex and high-rise structures

An effort was made in both the Oshawa and Whitby neighbourhoods to convert the potential income derived from all multiplex (in excess of 5 units) and high-rise structures into a market value estimate by the application of a gross rent multiplier. The necessity of obtaining sales statistics on various types of multi-residential structures precluded the possibility of confining data extraction strictly to the Oshawa and Whitby neighbourhoods. Sales material, therefore, was gathered in each case from across the entire city.

Multiplier figures were developed for properties selling from 1972 to 1974, inclusive. Obviously, the logic behind such action is predicated on the belief that the gross rent multiplier has remained virtually constant in this area for some time, since inflated market values have been subsequently reflected in the rents.

An investigation of rents throughout the city of Oshawa and the town of Whitby suggested a rent increase of 13% in 1973, and an additional one of 12% in 1974. In those cases where only 1972 income information was available, it therefore became possible to proceed by simply multiplying the income times the factor which coincided with the year of the available sale. Twenty-nine sales were thus analysed for the City of Oshawa, producing gross rent multipliers ranging from 6.39 to 7.68. Both the arithmetic mean and the median were calculated to be 7.01. The nine samples extracted from the town of Whitby again produced an identical mean and median, in this case 6.99. It was therefore determined that the value of all multiplex and high-rise structures was to be equal to seven times the gross income as of the valuation date. It is interesting to note in passing that the *Toronto Star* was at that time advertising several high-rise buildings in the Toronto area as priced at "seven times the gross income".

Investigation of an investment decision

As part of our effort to gain information and substantiate theories by direct contact with appraisers, agents and contractors, an interview was arranged with a prominent developer in the Oshawa area. This gentleman had just constructed a luxury high-rise apartment building on 4.107 acres of R-3 land in the city of Oshawa. It was hoped, therefore, that the discussion might centre on our theory of valuing R-3 land, as well as on the concept of a gross rent multiplier as a value formula.

Referring to the R-3 building regulations alluded to earlier, we can calculate a total hypothetical potential unit count of 140 for the 4.107 acres.

In fact, the developer constructed a 140-unit tower, demonstrating merely that he was fully cognizant of what constituted the highest and best usage of the land. When we confronted him with the hypothesis that his land was worth \$5,000 times the number of units or \$700,000, he could only smile and remark that if he had had to pay that much for the land, his ultimate rents would be astronomical. In reality, he had purchased the land almost a decade earlier, thus allowing the possibility of realistic rents, while simul-

taneously preserving the lucrativeness of his investment. However, he found our theory to be quite interesting, and commented that our proposed land value did not seem at all out of line.

But our theory could still be tested. By calculating the total land cost to a potential contemporary investor, and adding this amount to the building cost, we could produce a proposed market value estimate of the property. We could then quiz our developer to ascertain what he expects as annual return on his investment. After reducing this amount to a projected monthly rent per unit, we could then employ our G.R.M. of 7.0 to produce another proposed value for the property. If the two values compared favourably, it would be apparent that our suggested market value of the land was indeed accurate. In a very direct way, too, we would thus verify the concept of the gross rent multiplier.

Assuming, therefore, the market value of the land to be \$700,000, our developer suggested that the total land costs include \$2,700 per unit for impost fees and \$600 per unit for servicing. This produces a total land cost of \$1,162,000 to a person buying and developing the land under prevailing economic conditions in the contemporary marketplace. This sum, when added to the building cost of \$3,463,000, yields a total proposed market value of \$4,625,000. Assuming that the investor is astute and thus obtains the maximum available mortgage in order to retain his capital for other ventures, our developer indicated that an annual return of 10-1/2%, or \$485,625, would be required to service this amount. This can be reduced to a proposed monthly rent of \$289 per unit. But to this, the developer informed us, one must add approximately 35% for taxes, maintenance, heating, hydro, and management. This yields a total monthly rent of \$390 per unit.

Working in reverse and assuming 7.0 to be an accurate multiplier, another proposed property value can now be calculated by multiplying $390 \times 140 \times 12 \times 7$. This produces a value of \$4,586,400, only 0.85% lower than the previous estimate obtained through analysis of actual costs! There is thus a strong suggestion that our proposed market value of \$700,000 for the land is indeed accurate. The G.R.M. is likewise verified, and the benefits to be derived from seeking consultation with those directly related to the real marketplace are plainly and obviously exhibited.

Commercial property: formulation of a Variable Rent Multiplier

An effort was made in the Oshawa and Whitby neighbourhoods to analyse the relationship between commercial property market value and the income derived from that property. It should be suggested at this early point that time constraints permitted only a perfunctory investigation, and that further analysis might well have strengthened our contentions and provided even greater insight into existing economic relationships.

Essentially, the approach to value employed for such properties was generally based on the assumption that the typical contemporary investor will expect to realize a 10-1/2% annual interest return on his initial investment. This figure is composed of a 9-1/2% "safe" rate, guaranteed throughout the current financial realm, and a 1% risk factor indigenous to commercial investments in income-producing properties. The 10-1/2% suggestion, it will be remembered, was substantiated by the prominent Oshawa developer of the previous section. Real estate sales people, a contractor, and an influential city accountant also verified our 10-1/2% estimate.

If the property lease is net/net, i.e., the tenant pays all expenses, and the income is assumed to be comparable to prevailing economic rents, the income multiplier will therefore equal the inverse of 10-1/2% or $\frac{100}{10.5} = 9.524$. For

example, if we assume a hypothetical property value of \$100,000, the investor will therefore strive to realize an annual return of \$10,500 in order to service his mortgage and render his venture lucrative and economically viable. Stated in reciprocal form, the relationship therefore becomes $9.524 \times 10,500 = \$100,000$.

This relationship, however, is operative only in those cases in which a net/net lease exists between owner and tenant. It thus became apparent that the situation should be examined further with respect to net and gross leases. Obviously the investor requires a greater annual return; but how much exactly, and how would this figure affect the 9.524 multiplier? It was evident that the standard expenses incurred by owners of income-producing properties would have to be analysed in order to establish, if possible, the percentage each constitutes of the gross income. As an initial step it was decided to establish economic rents for the prevalent commercial property types in the Oshawa neighbourhood, thus enabling us to produce an economic income for each property. The percentages that each expense element formed of both the net income and the actual income could therefore be calculated and their comparative accuracy evaluated. It was hoped that ultimately a slide-rule technique could be formulated, whereby the appropriate multiplier might rapidly be ciphered merely by deducting the factors corresponding to the owner-paid expenses from the established multiplier of 9.524. The accuracy of the expense percentages respectively achieved using both economic and actual rents would determine which rents would be uniformly employed during actual property valuation.

Economic rents were therefore established for strip stores, strip offices, and small plazas, the major types of commercial development in the Oshawa neighbourhood. The rentals were reduced to a common denominator and then related to gross rentable square foot area for each building, thereby achieving a square foot rate which was then averaged for each property type. This figure was subsequently averaged with the corresponding median figure, yielding a per square foot estimate of economic rent for that property type. The 1974-1975 economic rent for strip offices in the Oshawa neighbourhood was established to be \$4.42 per square foot. The strip store analysis produced a \$4.96 figure. It should be remembered that these rents are indicative of averaged rates for existing leases, rather than new leases in new buildings (for which the going rate appeared to be approximately \$6.00 per square foot). The income generated from apartment rentals was excluded from the analysis.

At this point the income questionnaires were examined; however, few of the forms were deemed acceptable for the purposes of our investigation. As an aside, this may be a good example of how the neighbourhood assessor might do a more effective job simply by collecting whatever income data he or she feels is pertinent, in a fashion which is conducive to this analysis. In this case, only twelve of about 300 questionnaires were accepted, all representing income information on property types located in the Oshawa neighbourhood or a similar area.

Once the twelve sample properties were selected, the appropriate economic rents were applied, and the percentage which the standard expenses constituted of both the economic and actual incomes could rapidly be calculated. It

was immediately apparent that actual income was often wildly inconsistent and generally unreliable, thus leading us ultimately to reject actual rents entirely and accept economic rental application as the best method for establishing our slide-rule variable rent multiplier. The results of this analysis are tabulated in the following table:

Expense	Median of Econ. Percent	Mean of Econ. Percent	Average of Mean & Median
TAXES	16.19%	14.77%	15.48%
INSURANCE	1.79%	2.09%	1.94%
HEATING	5.63%	5.97%	5.80%
WATER AND HYDRO	5.43%	5.52%	5.425%
HEATING, WATER, HYDRO	10.47%	11.10%	10.785%
MAINTENANCE	4.92%	5.22%	5.07%
OTHER	1.82%	1.65%	1.735%

Our table, therefore, tells us that taxes constitute an additional 14.48% of the economic income. Referring once again to our hypothetical investor and his recent \$100,000 purchase of an income property, the net result of owner-paid taxes on the 9.524 multiplier can now be calculated. Obviously, the investor would no longer require an annual return of \$10,500 as was the case in the net/net situation, but rather would now need $\$10,500 \times 1.1548$ or \$12,125. The multiplier would, therefore, change from 9.524 to $\frac{100,000}{12,125} = 8.247$. The net effect of taxes on the multiplier can thus be stated as $9.524 - 8.247$ or 1.277. This is to say that $\$12,125 \times 8.247 = \$100,000$. It is hence suggested that the net income multiplier, to be employed in those cases in which the owner pays the taxes, should be 8.247. A similar approach was used to calculate the net effect of each specific expense on the 9.524 multiplier; the results are as follows:

Expense	Annual Return Required	Adjusted Multiplier	Net Effect
TAXES	\$12,125	8.247	-1.277
INSURANCE	\$10,704	9.342	-0.182
HEATING	\$11,109	9.002	-0.522
WATER AND HYDRO	\$11,070	9.033	-0.491
HEATING, WATER & HYDRO	\$11,632	8.597	-0.927
MAINTENANCE	\$11,032	9.065	-0.459
OTHER	\$10,682	9.362	-0.162

Equipped with the statistical information contained in this chart, we could then effectively value any appropriate income property, whether the lease were net/net (a multiplier of 9.524), net, or gross (using a gross income multiplier of 6.431).

This method was tested on a sale of a small strip store complex in the city of Oshawa. The sale occurred in October, 1974, almost the exact time of our selected valuation date. Examination of income data indicated that the owner paid maintenance, insurance and taxes, yielding a net

income multiplier of $9.524 - (1.277 + 0.459 + 0.182) = 7.606$. The economic rent was calculated using our prescribed rates, producing a total of \$24,388. According to our theory, therefore, the property should have sold for $\$24,388 \times 7.606$ or \$185,495. The property actually sold for \$195,000, rendering our proposed value low by a mere 4.87%.

We must re-emphasize that time constraints permitted only a preliminary examination of the income/market value relationship as it pertains to commercial income properties. It is recognized that, ideally, one should be equipped with *three* years of reliable income data for each property and permitted the time to more fully analyse and evaluate its acceptability. It should also be remembered that a multiplier should only be applied to a property's income after it has been firmly established that the subject property was definitely purchased for its potential income generation.

Although some practitioners may recommend that current assessments be performed on a cost approach, with the suggested multiplier method strictly as a back-up, it seems likely that eventually all bona fide income-producing commercial properties may be valued entirely by a multiplication of the income stream. The cost method thus would be reserved only for purposes of value substantiation.

Rural residential neighbourhood valuation: Darlington Township

The third neighbourhood included in the Durham project was Darlington township. In terms of acreage, Darlington township can be considered a rural area. However, urbanization has caused most of the rural population to relocate in various smaller communities. As of 1970, 90% of the total acreage was agricultural but contained only 9% of the population. Contrasted to this, 6% of the acreage was being used for residential purposes but contained 91% of the population. Figure 6 illustrates the spatial distribution of the 1970 land use pattern for Darlington. As one may notice, the main concentration of residential land is located between Highways 2 and 401, with smaller, isolated communities being developed in the central and northern sections of the township along the major transportation routes. Bowmanville is the main urban centre in the township, with more recent residential development occurring to the west where an over-spill of housing is evident from the Oshawa area (Town of Courtice development). The remainder of the township is considered to be agricultural, but is obviously feeling the effects of urbanization.

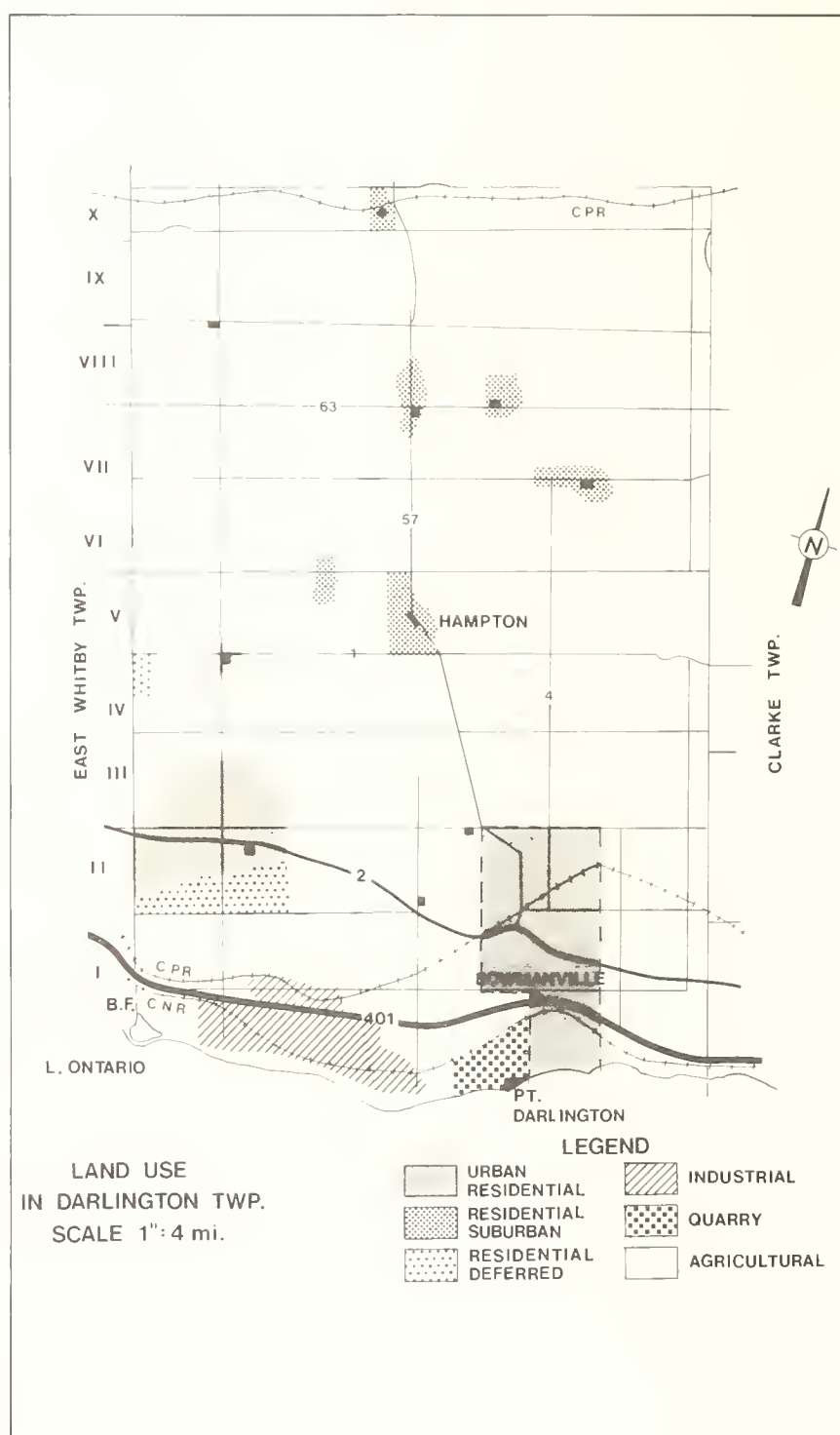
Clearly, what distinguishes Darlington township from the Oshawa and Whitby neighbourhoods is the predominance of larger-sized parcels and the still-prevalent farm land use. Although these differences do exist, it was nonetheless decided that market values were to be the objective for all property types, including farms. This direction was taken primarily because all available farm sales indicated that farms were not being sold as farms. A change in use for many of these farms seemed imminent. Consequently, it was thought to be advantageous for the regional assessment office to maintain and monitor market values for all properties; if changes did occur in the future, these market values would

be immediately accessible for use. At the same time, it was decided for the purposes of this study to examine the suitability of the market approach for large parcels of land, regardless of their present use.

Once it is recognized that farms in Darlington are not selling as farms (perhaps with the exception of the north-east corner), three basic property types emerge: non-commercial and non-industrial parcels over 40 acres; non-commercial and non-industrial parcels under 40 acres; and commercial properties.

Sales from 1974 provided the raw data for our market analysis. There were 22 improved and 5 unimproved sales for parcels over 40 acres; 149 improved and 27 unimproved sales for parcels under 40 acres; and 26 commercial sales.

FIGURE 6



Preliminary analysis of the non-commercial/non-industrial sales revealed a breaking point in the price of land per acre at the 40-acre mark. As a result, properties of 40 acres or more were separated to form a distinct property grouping. Interestingly, the larger parcels sold for a higher price per acre than the parcels under 40 acres. It is possible that the noticeable change in value occurs because developers anticipate tying up land for future uses and values; and, as the larger parcels are more flexible, they are of more value to the developer.

The valuation procedures followed for the properties which form the three groupings are discussed below.

Large parcel valuation

One of the key elements for successful valuation of large parcels of land is a detailed and accurate map. Quite often, this kind of map is referred to as a "cadastral map"; strictly speaking, however, a cadastral map should be the end product of the valuation process. For example, the American Heritage Dictionary defines "cadastre" as a public record, survey, or map of the value, extent, and ownership of land as a basis of taxation. This definition corresponds with the Oxford Dictionary definition. In any event, a map was drafted for the township detailing zoning, major roads, hamlets, and towns, as well as areas designated for future change of use, i.e. the agricultural land purchased by Ontario Hydro for a new generating station.

In our approach to valuing the larger parcels, we first plotted the 1974 sales onto a separate map of the township. All sales of improved and unimproved parcels were included and plotted with respect to their lot and concession. This procedure is undoubtedly very familiar to the experienced assessor.

The sales and the resultant price per acre for each parcel were also recorded on the detailed map. Once average value per acre rates were established, a transparent milar film was placed over this map and "acreage value zones" were drawn in. (See Figure 7 for a generalized version of this map.) The end product is a complete cadastral map; at the same time, it proved to be a tangible representation of the "concentric ring" theory of land value: land values become progressively lower as one moves out from the southeast corner of the township.

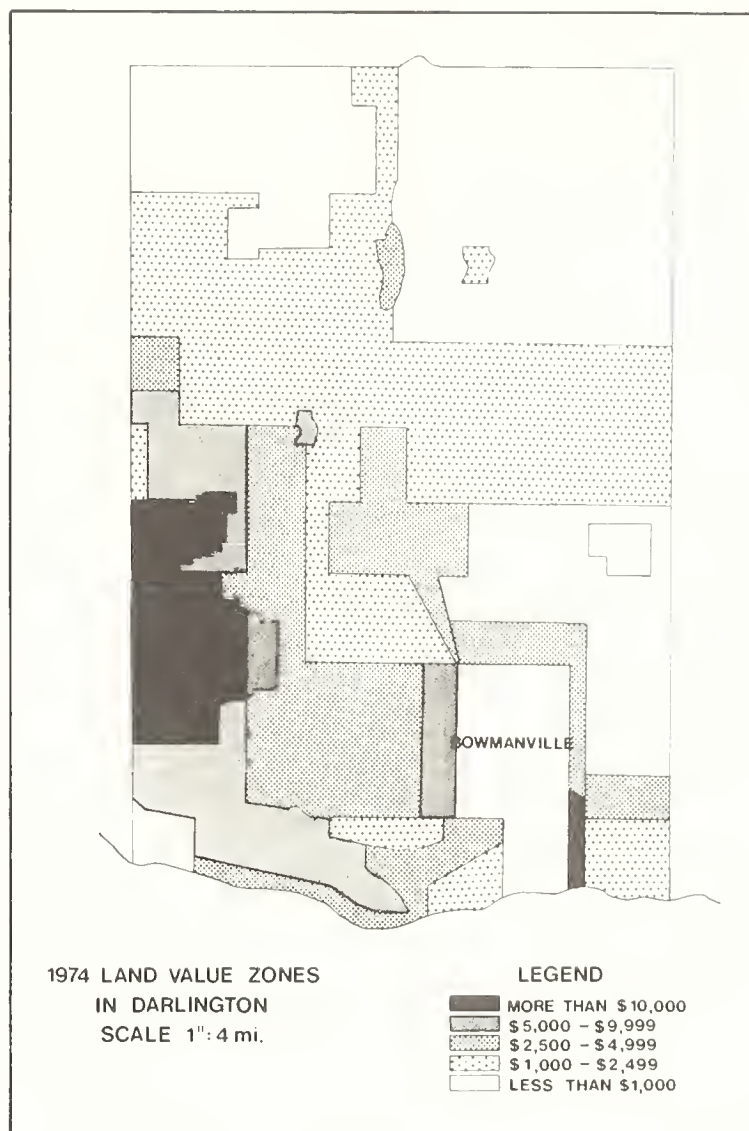
Large parcels in land value zones over \$2000 per acre

The pictorial illustration of value produced by the map provided a method for determining the market value of parcels of 40 acres or more. At this point, another break in the land value pattern was noticed; the sale prices of improved properties in the land value zones over \$2000 per acre, when compared to values received for unimproved parcels of similar size and location in the same value zones, indicated that improvements were not a value factor. In the case of farms, the existent farm outbuildings played no role in the value package. As a result, the value estimates for parcels falling into this group were predicated solely on the per acre value of the property.

Large parcels in land value zones under \$2000 per acre

In land value zones of less than \$2000 per acre, market data revealed that a value had to be placed on the improvements. It was discovered through further analysis that a value differentiation occurred with improvements built

FIGURE 7



after 1954. This required that the two groups be examined and valued separately.

a) Properties with improvements built prior to 1954

For the older properties it was found that the present provincial cost manual could be applied with some confidence. The following techniques, in combination, were used to produce market values:

1. The present 1972 R.C.N.L.D. for the residence was factored by a market adjustment factor of 1.8;
2. The present R.C.N.L.D. for existing outbuildings was left unfactored;
3. According to the location of the parcel on the value zone map, the appropriate acreage rate was applied.

b) Properties with improvements built after 1954

New cost data had to be collected for these properties, as the manual proved ineffectual for the residential improvements. The four steps which follow, in combination, produced reasonable estimates of market value:

1. Through contact with local builders an overall house cost of \$30.00 per square foot was determined;
2. The square foot area of the house was multiplied by the new square foot cost;
3. Using the present R.C.N.L.D. on the appraisal cards, allowances were made for significant outbuildings;
4. Land value was determined through the application of the land value acreage rates.

We should emphasize that three approaches were considered in order to achieve market value: site appraisal; use of the present provincial cost manual and market land value; and actual replacement cost plus market land value. Concurrently, the appraisal process was accomplished with constant reference to the cadastral map.

Once the methodology for large parcels was determined and the formulae established, it was possible to place 1974 market values on all properties in this category within three days.

Small parcel valuation

Parcels of less than 40 acres include seasonal cottages; year-round cottages; small houses with fair to average market appeal; average homes; above-average homes; deluxe homes; rural estates, and mini-farms. The sales of these parcels were plotted onto a township map in the same fashion as the larger parcels. However, there was no attempt to develop land value zones at this point because it was evident that the improvements had a marked effect on the overall price of the property. Therefore, improved properties were separated from vacant parcels, and the next logical step was to establish the exact effect of the improvements on value using graphical analysis. The 149 improved sales were plotted onto a graph, with floor area on the "x" axis and sale price on the "y" axis.

Despite the fact that this was a rural area, and therefore might have been different, there appeared to be a direct relationship between floor area and sale price, similar to that which occurs with the urban residential properties in Oshawa and Whitby. However, the pattern only occurred for properties up to and including five acres; consequently, in the next stage of the analysis we separated the smaller

parcels into groups according to lot size: 6 to 39 acres; 1 to 5 acres; and regular-sized residential lots. Although the first grouping may appear to be too broad, it should be noted that the majority of the properties fell around either the 10-acre or the 20-acre mark.

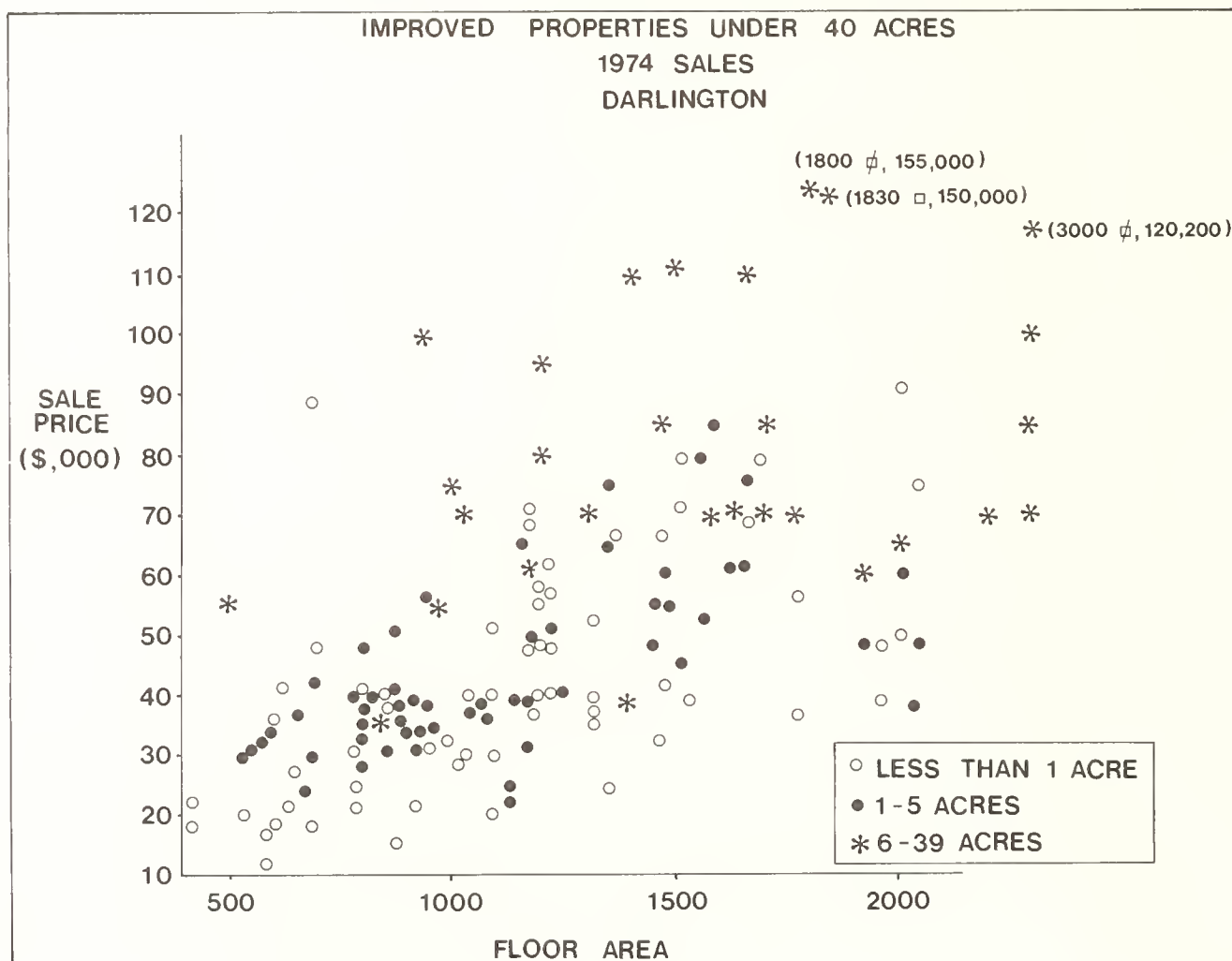
In order to demonstrate the similarities between residences in urban and rural locations, we will devote more detailed coverage to houses on regular-sized residential sites in rural locations. Nevertheless, it is worth making some observations about the non-farm or mixed-use types of properties on larger lots. In both this and the next group, assessors must exercise a great deal of discretion. The random distribution of these properties in Figure 8 gives some indication of the difficulties involved in valuing these properties.

Improved 1-to 39-acre parcels

For the purposes of this paper we will make only brief reference to the valuation of 1- to 39-acre parcels. These properties required individual attention, familiarization with the market, and constant reference to a sales catalogue of asking and selling prices. Some value adjustments were required for major differences in the floor areas of the improvements and for lot location. Age of the improvement also proved to be a value-influencing factor. These factors were all taken into account when developing value estimate formulae for unsold properties in this category. Again, however, due to the limited number of sales for this group, it is suggested that caution be exercised when interpreting such results. Maximum use must be made of maps and zoning knowledge in this case.

Richard Ratcliff, MAI, in his article "Appraisal is Market Analysis" (*The Appraisal Journal*, October 1975), suggests

FIGURE 8



that "when comparables are scarce and low in comparability, analysis becomes more complex and even more dependent upon the appraiser's past observations and general understanding of the market. The appraiser must resort to what is called 'market simulation'. Lacking hard data, he must fall back upon his broad knowledge of the market and, in particular, the relevant market sector. Taking into consideration all factors that are active in price establishment, he must create in his mind a simulation model or replication of the appropriate market sector and the active externalities that affect its operations. He then can make a judgment of what selling price would eventuate if the subject property were exposed to the market as the appraiser conceives it. His market is not hypothetical or idealized, for market simulation requires a conceptual reproduction of the real-life market as it is today and within which the price-setting sale of the subject property would have to occur if it were offered. In constructing this market simulation, the appraiser will use quantified measures where he can, but he will have to fill in the gaps out of his own recollections and observations. It goes without saying that if he is to use this simulation model for prediction, he must understand both how the market works and the dynamics of the processes of price establishment to which the subject property will be exposed."

Improved 1-to 5-acre parcels

Parcels of 1 to 5 acres were divided into three groups on the basis of building age: pre-1931, 1931 to 1953, and 1954 to 1975. It is interesting to note that in this case, the individual lot size did not seem to be a value-influencing factor. However, location by land zone was important; and while quality class may be associated with value, at present it is too subjective an observation to be of great use in determining value or distinguishing one set of properties from another. Some objective measure of quality class is required to achieve this end; for example, it would perhaps be more useful to distinguish differences between custom-built and subdivision housing. Not only does this convey important information about building quality in Darlington, but it is also easier to define and less prone to unintended errors in judgment on the part of the data collector.

Improved residential lots

The improved properties located on parcels of less than one acre were also divided into groups according to the age of the improvement. Four groupings emerged: houses built before 1931, houses built from 1931 to 1953, houses built from 1954 to 1960, and houses built from 1961 to 1975. The sales for each of these groupings were plotted onto separate graphs.

In examining the graphs, it was remarkable to find that the prices of these property groupings were set almost as logically and consistently in the market as those of the same age in Oshawa and Whitby. The only difference was that location in a specific land value zone greatly influenced the final value.

If we analyse each of the graphs individually, we can see some very interesting patterns unfolding.

Properties with houses built prior to 1931

Values for these properties fell easily into line. (See Figure 9.) The size of the house was very much reflected in the sale price; an increase in the floor area was coupled with a proportionate increase in the selling price. Renovations, however, also played a very large role. The value of the

property was so affected that the difference in the value of a comparable house was between \$20,000 and \$30,000 in favour of the renovated house. Obviously, special care is required in the valuation process to ensure accurate information about these properties in order to produce proper assessments.

Properties with houses built from 1931 to 1953

The graph for these properties indicated that there was no substantial difference in the selling price of houses with floor areas between 400 and 1,000 square feet. (See Figure 10.) The only difference in value — and it was a sizeable one, between \$20,000 and \$30,000 — occurred for a difference in location; houses not immediately adjacent to Oshawa sold for substantially less. In this case, some of the difference in price is also explained by the quality of construction. However, it is not necessary that this factor be considered when making adjustments, as location and quality are synonymous.

Properties with houses built from 1954 to 1960

The sales for this group revealed what one would expect — that the selling price increases proportionately to the increase in floor area. (See Figure 11.) Unsold properties in this group would be valued according to the square foot formula, \$15,000 plus an additional \$35.00 per square foot for every square foot over and above 500 square feet.

Properties with houses built from 1961 to 1975

The graph for this property group appeared the most complicated. (See Figure 12.) Three properties sold for substantially less than the others. Further analysis of these properties revealed that the value difference for two could be attributed to the fact that they were situated in a more rural location, the eastern part of the township, whereas the majority of the properties were located in "urban residential" locations (see land use map). Examination of the more detailed characteristics of the third property revealed that it did not have a basement.

It is interesting to note that the slope of the value line for this property group is much steeper than that which results for the other property groupings. Values change more dramatically as differences in floor area occur.

In-Field valuation

Graphical analysis permits the establishment of values purely through the objective analysis of recent valid market transactions. What better judge of market value than true market sales? The assessor, however, in completing the steps of the valuation process, when placing values on unsold properties must visit each property to insure value consistency. Concentration in the neighbourhood location is mandatory. In the field, equipped with the relevant graphs and maps, he or she sees properties which require obvious adjustments.

As a result of such a field inspection, it was found that some of the properties with improvements built prior to 1900 were in such a condition that in order to achieve reasonable market values, they had to be included with a more recent age grouping. Some properties were not adequately represented by sales; therefore, of necessity they had to be valued with reference to their most logical comparables. These became more apparent when in the field.

Obviously, some discretion on the part of the assessor is required when making adjustments. Nevertheless, the

FIGURE 9

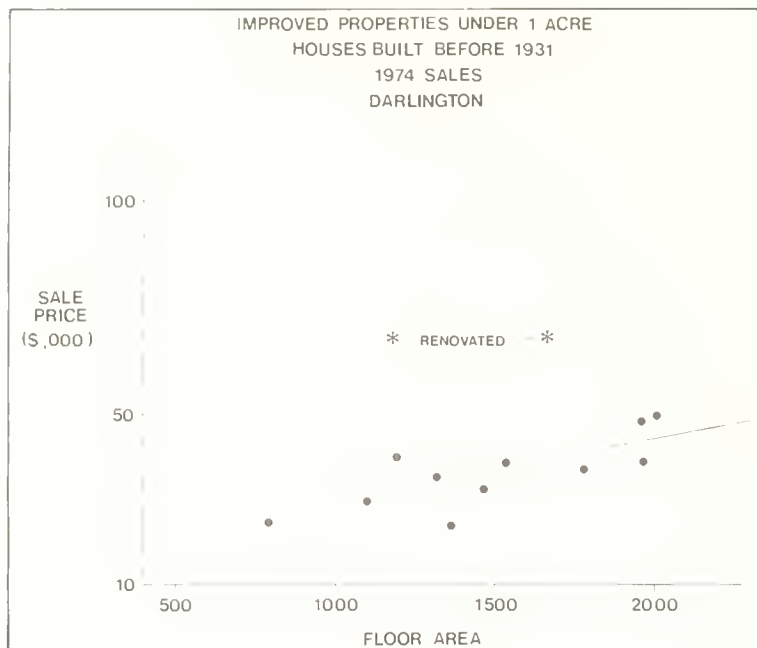


FIGURE 10

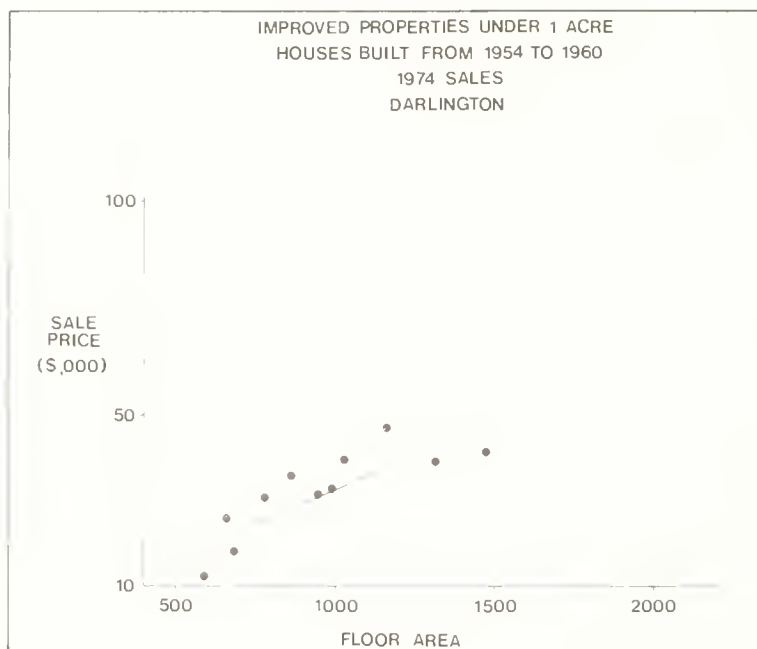


FIGURE 11

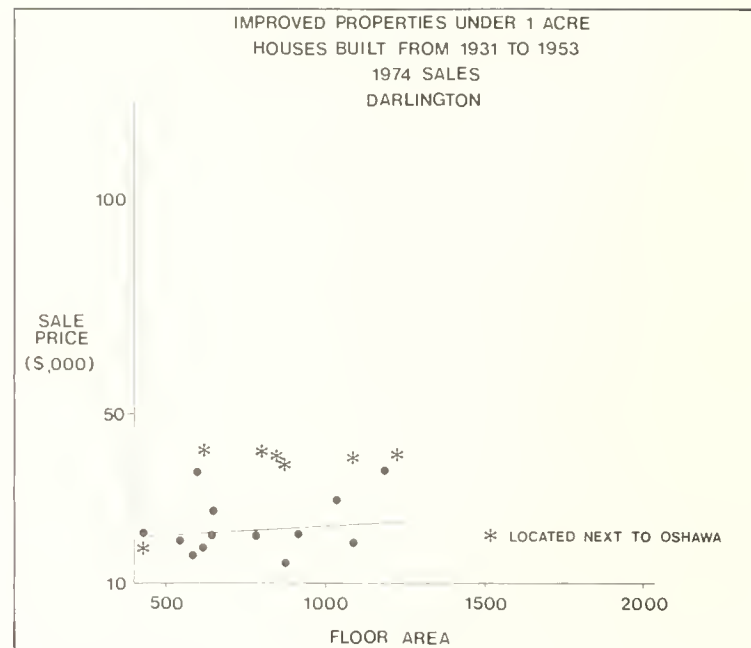
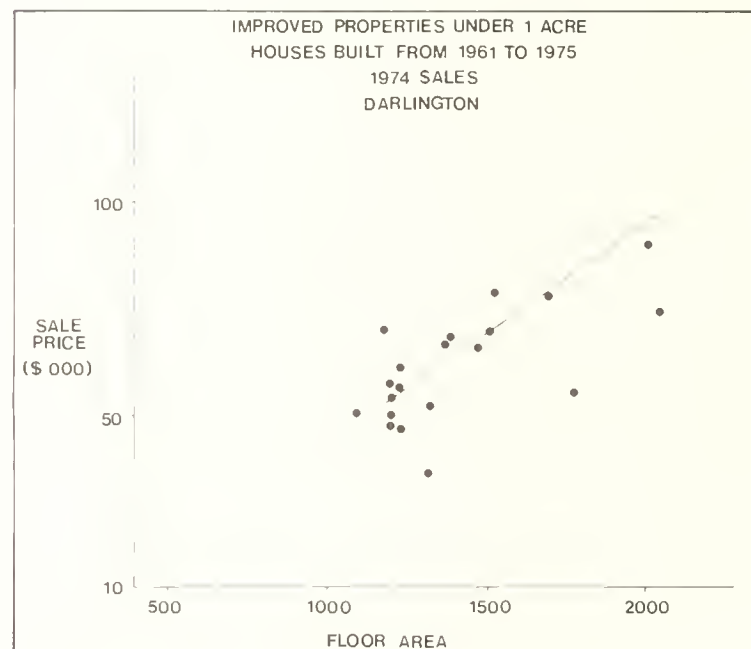


FIGURE 12



assessor is much better equipped for decision-making if he or she is conversant with a specific neighbourhood. This is partially assured if the assessor maintains a catalogue with all current sales and listings for the area and if all the sold properties have been plotted onto land use and zoning maps with reference being made to roll number and lot and concession location.

Where the graphical approach was applied and where there were enough valid sales to warrant accuracy testing, the results were extremely encouraging. Properties with improvements built prior to 1954 achieved accuracy levels of 67%. For newer homes, the accuracy levels were much higher — 80% to 90% — which is comparable to the levels obtained for similar properties in the Oshawa and Whitby neighbourhoods.

Vacant land

Vacant parcels of less than 40 acres were valued using the land zone map. This map is a result of plotting all land sales and establishing land value rates for specific locations

on a per acre basis. We were able to estimate land values by applying these per acre rates to the acreages of the parcels in question. Values varied according to property location and lot size.

Commercial valuation

The township has a limited number of commercial properties. As a result, market evidence is sparse. To supplement the available data, we have the option of borrowing the market values for comparably-designed commercial properties, if we make reductions for the economic obsolescence caused by the difference in location. This reduction, expressed as a percent, is based on the difference in rents that would be received if these properties were located in Darlington township.

A privately-owned service station, with a duplex above, located in Hampton and situated on approximately four acres of land, most of which is road frontage (having no more than a residential value), sold in 1974 for \$90,000. This commercial property is typical of those found in the

township. How would we proceed to place a value on this property? Perhaps the best approach in this case would be to apply present cost manual techniques, keeping residential values in mind as a benchmark. This approach results from an analysis of the commercial sales that have occurred during the past year (there were 26 sales in 1974). Most of the properties (service stations, retail outlets, garages, stores-plus-apartments) were selling in the \$40,000 to \$50,000 range. These values are closer to the residential values found in the area.

Further investigation of the commercial properties in Darlington revealed that most of them are marginal businesses and that the properties themselves do not generate an income sufficient to attract a buyer for that reason alone. In fact, one could safely say that in a township like Darlington, it is the "business" rather than the "property" or its "improvements" that generates the income. In these cases, collecting income data by the use of a standardized method or form is of questionable value to the assessor. The neighbourhood assessor should determine which properties, if any, are adaptable to the income approach.

Valuation of these properties using the income approach is further hampered by the fact that capitalization rates are almost always impossible to determine. They can be accurately established only if there is an active market. However, the existence of an active market would permit the use of the comparative sales technique, a more suitable method, given the nature of the commercial properties in this township.

For these properties it is more profitable to maintain a picture catalogue of all types of commercial properties and a cadastral map showing the location of sold properties. It would also be useful for the assessor to obtain market data from townships in Ontario having similar property mixes, socio-economic structures, and population trends. Then, as he or she is most familiar with variables affecting value in the neighbourhood, the assessor can adjust the data accordingly.

Conclusion

As is evident from this article, Darlington township can be characterized by its mixture of properties. Few homogeneous pockets exist. A number of valuation techniques, therefore, must be employed in order to accommodate the different property groups. Some techniques are obviously more appropriate than others.

The graphical approach proved very successful for all parcels of less than 40 acres in size (the majority of properties). Where this approach was unsuitable, other accepted valuation techniques were used. It was clear from this valuation experiment that first, the assessor must be totally immersed in the day-to-day workings of the market in the neighbourhood. Only then can he or she choose the appropriate alternate methodology. Secondly, hard and fast rules were not the answer to market value. The assessor must be free to modify the methodology according to the exigencies of the situation.

What appeared to be the most useful tools were the maps and graphs. These give the assessor a more visible picture of what is happening in the neighbourhood. Furthermore, the graphs and catalogue which result from analysing and documenting neighbourhood activity are invaluable for court purposes. They provide a convenient reference to the sales that have occurred for each of the property groupings. What better presentation material could the assessor have? A chairperson or judge can easily grasp the evidence as indicated by the graph; the existence or non-existence of a garage, for example, can quickly be seen to affect or not to affect value.

In conclusion, the valuation results achieved in Darlington indicate that market values can be produced in this type of area if some flexibility in applying valuation techniques prevails and if all available data is used to advantage.



Postscript: reflections on Neighbourhood Assessment

As we explained at the outset of this paper, this experimental venture into neighbourhood assessment was subject to definite time and resource restrictions. Furthermore, many of the approaches we used were tentative, attempted on a "trial and error" basis. Some of the results were less than satisfactory; some problem areas were never approached at all.

On the other hand, many of the results we did achieve in our limited time period were, we believe, more realistic in terms of the actual marketplace than those values being achieved by current assessment methods. We also reached

our goals much more efficiently and quickly than the existing system allows for.

After participating in this project, we became totally confident that, since market value assessment is to be the order of the day, an assessor totally involved with a specific neighbourhood market area would be the most qualified individual to place value estimates on the properties in that area. And we are convinced, too, that along with better assessment, more personal career satisfaction will result from the implementation of neighbourhood assessment in Ontario.

Other project reports

A number of reports have been prepared during the course of the project; where they have not been published elsewhere, the following reports are available from the Standards Branch and can be mailed upon request:

Randy White, David Montgomery, and Michael Cane, *Multivariate Analysis and Residential Property Valuation in Ontario* (Assessment Standards Branch, Ontario, Ministry of Revenue, Toronto, 1970).

Randy White and David Montgomery, *A Comparative Sales Method for Mass Appraisal* (Assessment Standards Branch, Ontario, Ministry of Revenue, Toronto, 1972).

David Montgomery and James Tait, "Development of a Simplified Market Data Approach for Mass Appraisal", *Proceedings of the 41st Annual International Conference on Assessment Administration* (forthcoming).

The following report is available for inspection only at the Standards Branch head office, 801 Bay Street, Toronto:

David Montgomery, James Tait, and Loretta Larsen, *Report of the Residential Appraisal Project*, 4 volumes (Assessment Standards Branch, Ontario, Ministry of Revenue, Toronto, 1975).

Volume 1: The Comparative Sales Method for Mass Appraisal: Computer Programs and User's Manual.

Volume 2: General Description of Computer Programs.

Volume 3: Statistical Analysis for Valuation Purposes.

Volume 4: The Comparative Sales Method for Mass Appraisal in Ten Urban Municipalities in Ontario, Parts 1 and 2. □



△ (Left to right) Janet Gordon, property assessor, talks about her career in the Ministry, while Terry O'Sullivan, revenue officer, and Barbara Papai, personnel administrator, await their turns.

REVENUE'S WOMEN ON THE MOVE:

A Report on the First Equal Opportunity Conference

Scarborough's Guild Inn was the setting on November 13 and 14, 1975, for the Ministry of Revenue's first Equal Opportunity Conference. Elected representatives from over 65 Ministry offices around the province attended the conference.

Organized by Equal Opportunity program leader Jeanne MacDonald and program assistant Karen Klinger, the conference was a busy and varied event. Among the activities were panel discussions, workshops, and a number of films about working women in Canada. Two of the highlights of the program were luncheon addresses by Ethel McLellan, executive coordinator of the Women's Programs Division, Ministry of Labour, and Laura Sabia, chairperson of the Ontario Status of Women Council.

Evaluation and participation

The conference focused mainly on the special problems and issues confronted by women employees of the Ministry within their working environment. In her welcoming address, Jeanne MacDonald commented, "An equal opportunity program has to be able to walk the fine line between respect for people's slowly changing attitudes and the increasingly pressing need for improvements that ought to be made. This means giving some serious thought to the kinds of things an equal opportunity program within a government organization can really do. We want to evaluate what we've done so far — and determine what we should do next. It's our problem — and I think we will arrive at the best

solutions if we work these things out together."

With these goals in mind, the conference was structured to encourage as much participation as possible by the delegates themselves. In one presentation, five women who have advanced significantly within the Ministry of Revenue discussed their career achievements and the obstacles and encouragement they encountered on the way. They were: Janet Gordon, property assessor 4, Assessment Division; Terry O'Sullivan, revenue officer, Retail Sales Tax Branch; Barbara Papai, personnel administrator 2, Personnel Services Branch; Elaine Ciabbari, inspector 1, Province of Ontario Savings Office; and Noreen Gomes, financial officer 6, Corporations Tax Branch. Other presentations were also made by delegates. Revenue head librarian Mance Lee discussed the International Women's Year library project, which is the establishment in every Ministry office of a library of information about the emerging roles of women in society.

Report on Assessment Career Paths

In a special presentation, property assessors Janet Gordon (North York) and Anne Reid (Scarborough) outlined the preliminary recommendations of their task force on potential career paths for clerical staff in the assessment field. The task force investigated a number of subjects, including the classification system, current promotional opportunities for clerical personnel within the Assessment Division, potential career paths, and differences in educational and experiential requirements between the clerical series and the assessor series.

On the basis of its findings, the task force proposed that "assessment clerical staff who have completed at least two years working at the level of Assessment Clerk 3 be eligible for employment as Assessor Trainees (Assessor 1)." Eventual promotion to the working level of Assessor 3 would be conditional upon the successful completion of specific training programs, such as the Institute of Municipal Assessors' course.

Other recommendations included the following: better and more regular distribution to *all* employees of information regarding job vacancies and eligibility requirements; continuation of the career development workshop program for clerical staff; initiation of

a comprehensive review of present clerical duties in the Assessment Division with a view to expanding promotional opportunities within the clerical series; coordination by the Assessment Standards Branch of the educational program required for transfer into the assessor series; establishment of a policy of equal opportunity for all assessment clerical staff to qualify themselves for promotion into the assessor series; and equal subsidization for the same courses to all assessment employees, including clerks.

The report was distributed to all Equal Opportunity representatives from assessment offices, and the recommendations are now being reviewed by management.

Critical issues defined

In other sessions, delegates were given the opportunity to question rep-

After the question periods, delegates were divided into work groups to discuss and evaluate what they felt to be the key issues for women employees.

In general, most of the groups agreed that soliciting line management understanding of and support for the goals of the equal opportunity program is the most critical problem. They were also concerned about promotion policies, recruitment and open competitions, rug-ranking, and career development possibilities through training programs.

Although the primary purpose of the conference was to identify problems and priorities toward which future efforts will be directed, several issues have already been referred to the appropriate people, and the results were discussed during the proceedings. First, at the request of the Equal Opportunity Program, the Personnel Branch investigated the Ministry's current attendance credit policy and



△ Mr. P. G. Gillis, Executive Director of the Assessment Division, discusses mutual concerns with assessors Martha McBurnie and Maureen Peterson. Mr. M. H. Gibson, Retail Sales Tax Director, is in the background.

representatives from the Personnel Branch and a panel of senior managers about current issues and future possibilities for equal opportunity within the Ministry. The managers who participated were P. G. Gillis, Executive Director of the Assessment Division; R. J. Weiers, Comptroller of Revenue; M. Gibson, Director of the Retail Sales Tax Branch; and M. J. Dugas, Director of the Province of Ontario Savings Office.

decided to modify it in order to allow time off for a working parent with a sick child. Second, the directors of the Assessment Division and the Retail Sales Tax Branch announced that by the end of 1975, different signing-in and attendance recording procedures for clerical as opposed to professional staff in regional offices would be discontinued.



△ Assessment representatives Phyllis Freeland and Elaine Cash enjoy an amusing moment with the others.

F.E.E.D. Program announced

Third, and most important, Deputy Minister of Revenue Terry Russell announced in his opening address to the conference the creation of the Fund for Employee Educational Development (F.E.E.D.). The F.E.E.D. program is essentially a significant expansion of the Ministry's current system of reimbursement to employees of fees for training programs and educational courses. According to the responses to a Ministry-wide equal opportunity questionnaire last year, in the past employees in low-level jobs (mostly women) usually have been discouraged from taking job-related or career development courses. Therefore, the vast majority of the funds earmarked for educational assistance has gone to employees in upper-level jobs (mostly men). Such a policy not only restricts the ability of lower-level employees to advance, but also tends to deny financial assistance to those who need it most.

Under the F.E.E.D. program as outlined by Dr. Russell, the emphasis will shift away from strict reliance on criteria such as job-relatedness or immediate value to the Ministry when evaluating courses to be reimbursed. Instead, the emphasis will be on a course's value to the individual in terms of his/her personal career development. The fundamental requirements are that a course be work-

oriented rather than leisure-oriented and that it be somehow work-oriented toward the type of careers found within the Ministry of Revenue.

Perhaps the most important aspect of F.E.E.D. is that it will allow employees to take courses leading toward formal qualifications for future higher-

level positions. Thus, for example, a secretary will be eligible for reimbursement for an accounting course. In the past, such reimbursement normally would not have been made.

A flat rate of 50% reimbursement of fees has been set.



△ Vivian Gifford and Shirley Poapst, Assessment Division delegates, concentrate earnestly on their career work group discussion.

The F.E.E.D. program represents an important step toward recognizing the career aspirations and efforts of Ministry employees, and hopefully will provide both monetary and psychological encouragement to those who wish to develop their potential. The program will take effect April 1, 1976; all Equal Opportunity representatives have been given more detailed information.

Although the conference did not produce a specific manifesto or detailed plan of action, most of the delegates agreed that it had been a great success. By giving women an opportunity to speak out and participate, the conference provided both the program leaders and Ministry management with a clearer idea of the priority issues that must be dealt with during the coming year.

The Delegates Comment

More important, the comments of the delegates themselves indicated strongly that a real sense of momentum and enthusiasm has been fostered among them; a number of representatives were interviewed some time after the conference ended. Barbara Goldman, clerk 3 in the Windsor retail sales tax office, commented: "The conference was a well-organized step in the right direction. It provided an excellent opportunity for women of different backgrounds, ages, and expectations to get together and discuss their problems and aspirations. The conference made us all much more

aware of what we are contributing as individuals to the Ministry." Nancy Kretschman, draftsperson 1 in the Waterloo assessment office, agreed: "I think we all came away more enlightened about the issues we face, as well as with more courage to work toward achieving equal opportunity to develop our potential. Career advancement possibilities seemed to be a critical issue for most of the delegates, and that's an encouraging sign."

Michele Turner, secretary 3 from the Assessment Standards Branch, said that the conference was most useful as an open forum. "It gave women who are perhaps afraid to speak up in their own offices a chance to discuss their problems freely. And for those of us who have been relatively lucky in terms of career development and working conditions, it was an eye-opening experience to realize how much needs to be done." Accountant 1 Claire Long of the Province of Ontario Savings Office also believes the conference gave the delegates an important overall view of the whole Ministry. "This was especially good for me since POSO is rather isolated from the rest of the organization."

Elaine Cash, assessor 1 from Thunder Bay, enjoyed the conference but wished all women employees could have attended. "It is somewhat difficult to sustain the kind of momentum and excitement that was created during the conference. If all women in the ministry had been there, they might find it easier to understand that

the career problems faced by individual women are relevant to all of us. Hopefully, the activities of the Equal Opportunity program in the future will make everyone realize its importance."

The general feeling of most delegates was summed up by Sonya Donaldson, clerk-stenographer 2 in the Ottawa assessment office: "The conference was really a worthwhile and exciting event. As a delegate, I came away with a better understanding of the issues, and now I'm in a better position to assist the women I represent. I think people realize now that the Equal Opportunity program is more than just window-dressing, and we're all waiting to see what developments."

Conclusion

Hopefully, the momentum created by the conference will be sustained through communication as the women return to their offices and translated into positive actions that will create a more open, flexible and congenial working environment in which all Ministry employees can contribute according to their true potential. Perhaps the real success of the conference, according to Jeanne MacDonald, is that "it has made us all aware of how much there still is to be done!" □



△ Equal Opportunity program leader Jeanne MacDonald and Deputy Minister of Revenue Terry Russell listen to an introductory speech by program assistant Karen Klinger.

FROZEN ASSESSMENT:

A Visit to the Algoma Assessment Office



△ Commissioner George Smith practises his tightrope walk for post-reassessment year.

Northern Ontario, with its vast expanses of largely uninhabited territory, poses unique problems for the assessor. Climate, distance, transportation, sparseness of population and actual location of properties are a few of the factors that make assessment in the North a very different operation than in Southern Ontario, in terms of both administration and actual property valuation. *Aspects* recently visited the Algoma regional assessment office in Sault Ste. Marie for a first-hand look at how a northern office is organized and operated.*

Algoma's vital statistics

Many of the fundamental statistics about Algoma are paradoxical and even astonishing in comparison to southern offices. The regional boundaries encompass approximately 16,000 square miles of land; the total population is 118,000. Sault Ste. Marie itself is fairly central to the region. From east to west Algoma stretches 385 miles; the furthest single organized municipality is Hornepayne, which lies 265 miles to the northwest of Sault Ste. Marie.

Of course, much of the region is uninhabited and unorganized. Regional assessment commissioner George Smith estimates that at the present time, around two-thirds of the actual land comes under the jurisdiction of the Ministry of Natural Resources for the provincial land tax, and therefore is not assessed by the Ministry of Revenue. However, this situation could change, and will be discussed later in this article.

Algoma's 21 assessors and 2 managers are currently responsible for 23 organized municipalities and 55 unorganized townships with 3 boards of education and 4 school sections. This involves approximately 68,200 properties: 35,300 residential, 150 multi-residential, 2,000 commercial, 110 industrial, 815 farm, 625 special and exempt, and 29,200 vacant.

*We are very sorry to report that just at the time this issue went to press, we were informed of the death of Mr. Warren Maheral, who was among the people we interviewed for this article.

Administrative challenges

Geographics

Needless to say, the administration of the assessment function in an area such as Algoma is a challenge. To cope with the special administrative needs, the office went onto a geographic system shortly after the provincial takeover of assessment in 1970. According to Mr. Smith, geographics is "really the only feasible system for such a widespread area."

In practical terms, the switch to geographics was a natural step for Algoma, because most of the former city and district assessors came to the province in 1970. Of the 21 assessors currently working in Algoma, 14 have been in assessment since at least 1966. Most have remained in their old areas of jurisdiction.

In manager Warren Maheral's group of ten assessors, one person is assigned to each of the six wards in Sault Ste. Marie for residential properties, while the remaining three assessors handle commercial and industrial assessments, including the huge Algoma Steel plant. The group as a whole is also responsible for the town of Elliot Lake (125 miles east of Sault Ste. Marie), and teams of two or three assessors generally visit the town several times a year or as necessary.

Allen Zubko is the manager in charge of all the other municipalities in Algoma. Each of his eleven assessors is assigned to one or more specific municipalities and must assume responsibility for all assessment work there, including appeals and open house sessions.

Within the geographic framework, several types of properties are handled on a region-wide basis: namely, special and exempt properties and railway lands. Mining properties are assessed by the regional office staff, with the assistance of the Field Operations Task Force.

Travelling — from boats to snowshoes

The heavy travel requirements mean that continuous advance planning is vital to the smooth operation of the office. Mr. Zubko, for example, prepares a travelling schedule of approximately three weeks at a time for his assessors. In his view, "if you don't plan virtually everything ahead, the work simply won't get done." For Mr. Maheral, the problem is less crucial, since his crew is based in the city.

Because the distances are so great, travelling interferes significantly with the effective working time of many Algoma assessors. Often, two days or more in one week may be spent doing just the actual travelling to and from a municipality. Furthermore, each season brings its special problems. In the winter, weather conditions sometimes make it difficult or impossible for an assessor to reach a particular destination. Summer brings a large and steady stream of tourists to Algoma, which creates an acute accommodation shortage; according to Mr. Smith, assessors must reserve their rooms at least a week in advance during the summer in most Algoma municipalities.

A closely related problem is transportation. The regional office possesses only two government vehicles, which means once again that precise planning is required in order to organize travelling in the most efficient way. Furthermore, a car is totally useless as a mode of transportation in some of the more remote areas. Mr. Zubko pointed out that Algoma assessors have, on occasion, used small planes, boats, snowmobiles and snowshoes to reach their destinations! Sometimes the services of guides are also required. One township north of Sault Ste. Marie can be reached only by train, as there is no road access — and the train only runs twice a week.

Communication with municipalities

Given the difficulties of travelling, assessors in the North must develop an efficient system of communication with their distant jurisdictions. Bill Mick, a P.A. 3 working with Mr. Zubko, commented that the telephone is his major tool for regular communication with both ratepayers and municipal officials in his geographic areas. He has encountered no particular administrative problems; he pointed out that "distance factors mean the assessor must accept the responsibility of maintaining the lines of communication with his areas as a natural part of his daily work." All of the assessors agreed that most municipal officials, especially the clerks, are extremely cooperative in providing information.

Open Houses a vital link

Because the assessor is often personally unavailable to ratepayers in remote municipalities, the open house is an important event. Most municipalities in Algoma have been reassessed since 1970, and in each instance open houses have been held. Most have been extremely well-attended. Mr. Maheral pointed to Elliot Lake as an example. After its reassessment, three days of open houses were held, and more than 300 people attended. As a result, he said, the number of appeals was relatively low: 650 appeals were made to the Assessment Review Court, of which approximately 300 mining appeals were withdrawn, and only nine appeals went to the district judge.



△ Commissioner George Smith (centre) explains the reassessment program to Hornepayne councillors, while manager Al Zubko (standing) stands by for a hasty exit.



△ "What have those crazy assessors done now? An E-6-E? You check the files and I'll check the cost manual!" Assessment clerks Gail Snyder and Denise Beckett attempt to sort out a bizarre classification.

Algoma assessors plan their open houses thoroughly. As Bill Mick pointed out, they often represent the average ratepayer's only annual opportunity to establish personal contact with the assessor.

The question of Sub-Offices

Occasionally the idea is proposed of establishing sub-offices in certain municipalities, and indeed they do exist in some parts of the province (as, for example, in the Thunder Bay region, which covers a geographic area that is larger than France).

But in Algoma, there is universal agreement among the staff that sub-offices are unnecessary. Mr. Maheral feels they would create more administrative confusion and complexity than they would solve. Stuart Armstrong, a P.A. 2 working in the City of Sault Ste. Marie, said that "there simply isn't enough constant, steady work in any municipality other than Sault Ste. Marie to justify keeping assessors there all year long."

Assessment Services in the North

The assessment services function is also affected to some extent by the special circumstances in the North. Edward Perks, the Algoma assessment services manager, discussed a number of factors that influence his work. He said that hiring and training enumerators in isolated communities is often a problem. During the enumeration period, a system of staggered deadlines is used. Sault Ste. Marie's work is collected and edited first, which gives district enumerators more time to cover their territory. In unorganized territories, assessors are sent to enumerate the more remote areas.

If the enumeration reveals a new apartment or home in a municipality, the apportionment must be adjusted. This means that an assessor must be sent out to inspect the new property. According to Mr. Perks, this is one of the biggest drains on the assessment staff's time — once again, because of the travelling distances involved.

Despite these relatively minor problems, the assessment services function is generally governed more by established procedures than by geographical and other factors. Many of the deadlines are statutory and must be met regardless of

local circumstances. Mr. Perks stated, "Assessment services is basically a 'peak and valley' type of operation. Our busiest period is September through November, and by organizing well and relying on the telephone, we have had no particular problem getting our work done."

Valuation and the northern market

Aside from organization and administration, assessors in Northern Ontario must also deal with certain types of unique valuation problems. Some involve special types of properties, but even residential valuation is challenging at times.

In general, according to Mr. Zubko, the real estate market is less volatile in Algoma than in many parts of southern Ontario. Nevertheless, real estate prices have been rising steadily throughout the region in recent years; Mr. Mick said that in some of his municipalities the market has doubled and tripled in the last several years.

Where is the Market?

Despite the sales activity, however, it is sometimes virtually impossible to pinpoint "the market" as such and to extract relevant sales data. Mr. Smith explained that in many municipalities, there are simply not enough comparable properties — even for residential valuation — to do a foolproof sales analysis. "Because comparables tend to be widespread, the term 'vicinity' takes on a very different



△ Assessors Norman Marshall and Steve Vance ponder whether to give this farm a rocky soil classification, with an upward adjustment for the spectacular view of Abitibi Paper Company.



△ A graphic illustration of the difference between work and supervisory tasks: (Left to right) mapping supervisor Roger Fournier, assessment services manager Edward Perks, draftspersons Rob Malish and Marilyn Phillips.

meaning in the North," Mr. Smith said. Assessors often look to nearby municipalities for comparables.

In unorganized areas, sales analyses are done on a township-wide basis and then compared to adjacent townships, according to P.A. 3 Tony Pecjak, who is responsible for the town of Wawa and one other township. The problem, he said, is not the lack of an active market, but rather the scarcity of enough comparable sales in any given municipality.

The "Boom and Bust" cycle

Region-wide sales analysis is usually not a viable alternative, said Mr. Smith, because there are so many economic factors that influence property values in the various municipalities. One peculiar phenomenon common to the North is the "boom and bust" cycle. This happens in municipalities that are essentially one-industry towns, particularly mining communities. Elliot Lake is a case in point. During the 1950's, both the population and property values escalated dramatically as the local uranium mines — virtually the only major employers — prospered. Then in the 1960's the world-wide uranium market slumped drastically. The Elliot Lake mines came to a standstill, and residents had to move and find work elsewhere. Of course, there was a corresponding drop in property values, with many sellers and no buyers. Then the situation reversed itself again several years ago: with growing demand for uranium, the mines reopened and people once again came to Elliot Lake. At the present time, Elliot Lake is experiencing another boom and so are property values.

The "boom and bust" cycle poses certain problems for northern assessors, because the real estate market lacks

stability. Careful attention must be given to the market in such towns in order to determine the current phase of the cycle.

Mining Claim Properties

With regard to commercial, industrial, and special properties, the market is virtually impossible to determine because there are so few sales, according to Mr. Smith. Mining properties present no real problems, but Mr. Pecjak believes that eventually a policy may be needed for the assessment of mining claim properties. These are lands with potential mineral deposits, the rights to which are claimed by individuals or corporations.

The Provincial Land Tax

One potential administrative change could have a dramatic effect on all northern offices. This is the proposed transfer of responsibility for the provincial land tax from the Ministry of Natural Resources to the Ministry of Revenue. Obviously, most of Ontario's unorganized territory is in the North. In Algoma, two-thirds of the territory comes under the jurisdiction of the land tax. Mr. Zubko said that it makes administrative sense for assessment offices to take over the land tax, but he pointed out that this would increase the workload and travelling time of assessors substantially.

"The scope is tremendous"

Information on some of the properties is available already in the regional office, because unorganized town-

ships with school boards are assessed for the school tax by the Assessment Division. Mr. Smith estimated that perhaps 3,000 properties would be involved in a transfer of the land tax function, but many of these are in extremely remote and even inaccessible areas. The Ministry of Natural Resources currently administers these Algoma properties through ten district offices in ten different towns — one of them located within the *assessment* region of Thunder Bay. Mr. Smith believes that "the scope is tremendous, and a great deal of organization would be required even to transfer the records from these offices." He feels that he would require more staff to handle the workload, especially if the takeover is effected before reassessment is completed.

The Land Tax and SAS

A takeover of the provincial land tax could also affect the assessment services function. Mr. Perks said that the current valuation method used by Natural Resources is not the same as the market value method. This means that the data system is incompatible with the Standard Assessment System (SAS). If the systems were not integrated, he commented, the workload of the services staff would increase considerably because it would be necessary to transfer the valuation data between the systems. Against this, it seems certain that the Provincial Land Tax Register will be aligned with the S.A.S. and thus will not impose changes beyond additional workload.

Algoma assessors are not opposed to the idea of taking over the land tax administration. However, they all seem to agree that it would add significantly to their workload and would require reorganization and replanning for the region as a whole.

Conclusion

Despite the rather unique circumstances confronted by assessors in Northern Ontario, most of them seem almost to take for granted the special requirements and occasional difficulties of their jobs. George Smith commented, "When you are working in an area as vast as Algoma, you just have to adapt to the constraints of your surroundings and the preferences of your staff. Basically we have achieved this by leaving most of our assessors in their previous jurisdictions. In this sense we started out with the advantage of a great deal of local knowledge among the staff. I think that in general most of the assessors have coped very well with the occasional problems caused by distance, weather, and other factors."

Perhaps Steve Vance, a P.A. 3 in Warren Maheral's group, best summed up the viewpoint of Algoma assessors on assessment in the North: "I really don't think there are that many serious assessment problems in the North as opposed to the rest of Ontario, in either administration or valuation. Basically, you adjust quickly to any special situations and accept them as a natural and normal part of your job. You learn very quickly to anticipate certain things and allow for them so that your schedule will be disrupted as little as possible. Life in Northern Ontario has a lot of advantages which more than make up for any inconvenience, whether at home or on the job."

Mr. Mick and Mr. Pecjak are of the opinion that the Northern Ontario assessor has an advantage in that he is not relegated to specific areas of assessment, but must become familiar with techniques, market trends, and the valuation of all types of properties.



QUESTION & ANSWER

Q: *The recent Henderson Committee Report has recommended that the Assessment Division be reduced in size significantly once the market value assessment system is operating smoothly. Do you believe that this recommendation will be implemented? If so, when and how will the cuts be made?*

A: *It is difficult to predict the extent to which the recommendations of the Henderson Committee Report will ever be implemented. In the first place, the recommendations are contingent on the reassessment being completed and taxed by the municipalities. It is unlikely that all of this work will be completed prior to 1979, simply because of the massive number of appeals anticipated and the various other things that will need to be straightened up subsequent to 1977. In fact we are three or four years away from the impact of this particular recommendation. At that time, it may well be that the extra work created by property development, new properties being built etc., will require that no reduction be made in the complement of the Assessment Division. On the other hand, it is also recognized there will be certain kinds of organizational changes; namely, assessors will be working on the basis of a neighbourhood concept rather than along the lines of a functional division of work, as was done in the past. So the effects of neighbourhood assessment will, of course, have to be measured before we can come to any concrete conclusions about the probable effects of the Henderson Report.*

Q: *A number of regional offices have not yet switched to a geographic organization, and there is some concern among assessors that these offices will not make the change at all. Is geographics here to stay, or will this system be phased out gradually after the reassessment?*

A: *I think there is no question that if there are some regional offices which have not yet switched to a geographic organization, then certainly that switch will be made. It will have to be made because the new scheme of doing things, once we finish this reassessment year, will be to allocate certain geographic areas to assessors who will be responsible for valuing all the properties in that area. In certain types of regions, it may well be that we will require specialists to value intensively developed properties such as Commerce Court, the new Eaton's Centre, etc. Indeed, if an assessor is allocated to that particular area of Toronto and he needs this sort of help, there will be specialists to supply it. But geographics will be the basic organizational framework.*

Q: *Very little information has so far been made available to assessors about what has happened in reassessed areas such as Muskoka and West Carleton. What has been the general public reaction to reassessment in those areas? Did the number of appeals increase significantly? In general, how did the courts respond to the reassessed values?*

A: *In both West Carleton and Muskoka, the responses have generally focused on taxes rather than assessment. That was particularly true in Muskoka, because the reassessment coincided with the implementation of regional government. The greatest complaint from people in that area was that taxes had gone up significantly; there were very few, if any, complaints against the reassessment other than the regular appeal procedures. In West Carleton, the assessment system itself was in a mess, and the revaluation straightened out that mess in large measure. There are undoubtedly some errors still, but these will be worked out in time. To give an example of public response, the CBC recently televised a program on which various rate-payers' groups in West Carleton appeared. These groups participated in a debate about reassessment; by and large, the consensus was that everyone was fairly happy with the fact that the assessments had been equalized. Other than that, the Minister has not received any letters from anyone in West Carleton complaining, and neither have I.*

Q: *What about the number of appeals? Did they increase drastically?*

MR. GILLIS SPEAKS ON THE IMPACTS OF REASSESSMENT, THE HENDERSON REPORT, TAX SHIFTING AND ...

A: *There were around 600 appeals in West Carleton against the total number of 6,600 properties assessed, which was about the usual percentage.*

taxes – the opposite of Muskoka. This was all straightened out so that the high tax bills went down to \$350 or \$400, and the low ones went up to that level. But there have been few complaints about the taxes so far; there may be more later. And in West Carleton, the reassessment adjusted the 1975 taxes, as well as those for 1976 and subsequent years.

Q: *Muskoka and West Carleton were really two different kinds of reassessments in terms of types of properties. Are you saying that generally the reaction was the same in both areas?*

Q: *Did the courts generally uphold the reassessed values in both of these areas?*

A: *Yes, they did.*

A: *Generally speaking, in Muskoka the public response was affected by the simultaneous creation of regional government, which meant that large numbers of people started paying municipal taxes for the first time. Some of them were twelve miles or more distant from the site of government and did not have the benefit of any municipal services at all. Many cottage owners, for example, could see no changes in services; they still had to travel several miles down a lake by boat to get to their properties, and they still had no electricity, no police protection of any kind, and no municipal services. Yet their taxes suddenly went from a minimal land tax to a municipal tax of perhaps \$250 or \$350. Really, they could see little benefit, and their argument was that if they were not getting the services, they shouldn't be taxed for them. That was the general complaint in Muskoka; there were few, if any, complaints about the assessments themselves. In West Carleton, a great number of complaints were made prior to the reassessment. There, the discrepancies were so great that two people owning similar houses might have been paying taxes of \$800 and \$50 respectively. In some instances, homeowners were paying the minimum tax bill of \$6.00. There were sixteen different methods of assessment in West Carleton, so that values placed on two virtually identical properties varied from \$50 to \$5500. So in West Carleton, ratepayers were complaining about their assessments rather than their*

Q: *We are all aware that reassessment will cause tax shifts. Studies have been carried out already in some of the reassessed areas. What has been the general trend of tax shifts in these areas?*

A: *I think it is difficult to pinpoint any general overall trend with respect to tax shifts. In some instances in the rural municipalities, for example – there will be no significant tax shifts simply because the bulk of the assessed properties are of one type, such as farms. Tax shifts are going to occur in the municipalities that have mixed commercial, residential and industrial properties, and where an attempt was made – deliberate or otherwise – to assess commercial and industrial properties at a higher rate than residential properties. Of course, this will not be true of all municipalities; in many municipalities there will be a very small tax shift, and the tax shift that will emerge will be occasioned by the fact that property values have been rising more rapidly for residential properties in recent years than for commercial and industrial. At the moment, while the studies are indicating a certain amount of shifting from one class of property to another, they do not indicate a uniform and consistent shift across the entire province.*



Q: *There really haven't been many surprises, then? We knew most of these problems before we started.*

A: *No surprises whatsoever. In fact, what has emerged from the Niagara study up to now indicates that our original hypotheses on tax shifts have not changed significantly. In West Carleton we knew exactly what the figures were going to be and what the shift was going to be; and in that instance the shift was from the over-assessed properties to the underassessed, and from improved properties to vacant land, which was significantly undervalued.*

Q: *There has been some criticism leveled at the "blitz" approach to reassessment in problem areas, using out-of-town assessors who are not familiar with the area. In particular, politicians, residents of rural areas, and some assessment staff have said that this approach creates more problems than it solves. A council member in one area where this method was used referred to "busloads of assessors" coming into the municipality. Will the Assessment Division continue to use the "blitz" approach?*

A: *I think there is no way of overcoming a "blitz" approach to reassessment in certain problem areas. That is the way we did West Carleton and we did it in two weeks. Clearly there was no problem associated with different opinions and different people being there. The West Carleton assessments were checked very carefully by the municipal council as well as by its officials, and they were amazed at the consistency with which the residential properties were assessed. I just don't believe that it creates any problem whatsoever to bring in assessors to an area, as long as they are well-trained and skilled in valuing properties. They can function effectively anywhere in the province if they are supplied with the basic data. A good assessor should be able to do just as competent a job in one place as another.*

Q: *Many assessors who leave the Division are going into the appraisal, consulting, and tax agent fields. How concerned are you about this current trend? Do you think it may create problems in the courts?*

A: *No, I am not concerned about the fact that assessors who leave the Division are going into these fields. It is probably the better-trained people who are going into these areas. They probably know and understand quite a bit more about assessment than the people already in that field do, and I think it makes our job easier if we are dealing with property representatives who are knowledgeable about assessment. Those agents who don't really understand the mass appraisal concept sometimes take unreasonable positions, which makes our work more difficult. So on the one hand, you have good people and you hate to see them leave; but on the other hand, there are benefits in having expertise on the other side.*

Q: *Aren't there disadvantages for the Division when people with inside knowledge take that knowledge with them to the private property sector?*

A: *Well, you can't take away the right of people to go to other jobs. Just because you are a civil servant, it doesn't mean you can't use some of the information you have acquired. Your oath of office precludes you from using some of it, but still the knowledge is there. Perhaps former assessors will ask better questions and demand better answers from the Division, but there is also the fact that if they are given reasonable answers, they are likely to comprehend them more fully. I think you just have to assume and hope that people who leave the Division will behave responsibly with respect to the special knowledge they have acquired.*

Q: *There appears to be a rather large number of managerial vacancies in the regional offices at this time, and they are not being filled easily. Why?*

A: *I don't think there are a large number of managerial vacancies, though there certainly are some. I agree that it is getting more and more difficult to fill them because people are not being attracted from one region to another to apply for these jobs. It seems that P.A. 4's are generally of the opinion that they are better off where they are, with almost the same rate of pay and fewer burdens. So yes, I agree that it*

... "BLITZ" APPROACH TO REASSESSMENT, TURNOVERS, CAREER PROSPECTS AND LICENSING OF ASSESSORS AND APPRAISERS

is getting more difficult to fill managerial positions, but on the other hand, I don't think there are a large number of vacancies.

Q: What are your thoughts about the concept of licensing assessors?

A: *I don't believe that there is any necessity of licensing assessors, particularly the ones that work for us. I think Ontario assessors are probably the best trained and most skillful property valuers — from a theoretical standpoint, anyway — in the province, and they will remain so as long as we maintain a reasonable level of in-service training. I don't think there is much to be gained from attempting to license your own employees. On the other hand, if indeed there is an attempt made to license appraisers — property valuers generally — then, of course, the pool will be enlarged tremendously, and that would make it worthwhile to have our assessors accredited in exactly the same way as all other property appraisers.*

Q: We understand that in the last couple of years, an attempt has been made to license appraisers. Are you suggesting, then, that this attempt has been abandoned, or that it is only temporarily dead?

A: *The attempt was made; but as so often happens, there is an initial flurry of activity, then nothing happens for a long while. To my knowledge, nothing has happened with the licensing proposal in the last six or seven months. No one has mentioned anything at all recently. It may well be that it has fallen by the wayside, or perhaps it will come up again for debate. I think the Division is protected by having Angus MacKay, Director of the Standards Branch, on the*

committee that is investigating this proposal; certainly he will be aware of the most recent developments. All we can do is wait and see what happens. On the other hand, we don't want to be left out in the cold. We want to protect the interests of our employees, if indeed the appraisal profession is successful in going ahead with its licensing scheme. I personally don't believe that The Appraisal Institute is the only organization qualified to train property valuers, and I don't necessarily believe that theirs is the best and only program of training at the moment.

Q: What opportunities are currently available in the Assessment Division for P.A. 3's who wish to upgrade themselves without relocating to other parts of the province and without taking on managerial responsibilities?

A: *Opportunities for promotion are fairly limited in that there are only a certain number of jobs available in each region that are superior to a property assessor 3. So in order for a better job to become available, someone is going to have to retire, resign or move in order to create a vacancy. But there is a fair amount of turnover, so there are opportunities available. As far as professional upgrading, there are a number of courses that can be taken, including the A.A.C.I. course and others. It is just a matter of self-nomination by the assessor, with the permission of his or her manager. We have more funds available for courses than people have been using up to now. At the moment, some of the course money is going unused. So if P.A. 3's wish to advance all that is required is some initiative. The opportunities are there. □*

**QUESTION
& ANSWER**

MAPPING PROGRESS:

A summary of the first assessment mapping conference

LOU STADELMANN
Assessment Standards Branch

Introduction

The first provincial Assessment Mapping Supervisors' Meeting was held in Toronto on October 22 and 23, 1975 and was attended by all mapping supervisors and several members of the Assessment Standards Branch. It provided an opportunity to discuss mutual mapping problems, to propose solutions to overcome these impediments, and to devise ways and means of implementing more effective communication between the mapping staff and the Assessment Standards Branch. In addition, mapping supervisors were able to review the Assessment Mapping Program in terms of its original purpose, its success to date, and its future potential, both within the Assessment Division and, in a larger context, as the basis for a land information system.

Higher priorities in mapping

Although the delegates were successful in identifying important mapping problems and providing a forum for their discussion and resolution, the meeting itself was considered to be only a first step toward achieving the goal of complete and accurate assessment mapping before reassessment. It was recognized that without a significant change in the priority that mapping has been given in the past, many of the resolutions passed by the assembly cannot be implemented, nor will the goals of the mapping program be achieved.

Most assessors are aware of the importance of assessment base maps for the completion of an accurate and efficient reassessment program. Unfortunately, many factors have impaired the progress of the mapping program. In particular, the regions' economic and geographical disparities and the absence of maps in many municipalities before the provincial take-over have resulted in great variability in the volume of work that has had to be done. This situation was further complicated by inadequate standardization of mapping procedures and the inconsistent emphasis that was given to the mapping program by the different assessment regions.

Consequently, while some offices have completed their mapping, in general most regions have substantial areas yet to be searched and mapped. Several have mapped only approximately 50% of their properties.

Several basic steps, passed as resolutions by the meeting, were proposed to achieve complete assessment mapping coverage in the province as soon as possible. First, staffs should be temporarily displaced to aid those regions whose mapping sections require additional resources to complete their basic work. Second, the Assessment Division should obtain all current aerial photography. Third, mapping sections should be kept informed about the mapping projects that are taking place within their own regions. This information would be very helpful in establishing base maps quickly for each region. Fourth, each office should have a microfilm reader/printer to facilitate property searches during basic mapping and to aid in the rapid retrieval of conveyance information.

Finally, serious consideration should be given to the creation of positions to be called Area Mapping Coordinators. Two or three people would be required for effective liaison and supervision among all regions. Their responsibilities would be:

- (a) to guide the temporary transfer of mapping personnel to those regions of greatest need;
- (b) to obtain all important map source data for the regions; and
- (c) to establish and maintain quality control procedures in mapping.

Policies for standardization

Further discussions focused on the issue of map standardization policies. It was recognized that the assessment base map was designed primarily for the assessor's use, and that he or she has come to expect a high-quality product which contains specific common elements. A policy was adopted of pursuing standardization while maintaining the flexibility to accommodate unique geographical and administrative characteristics in many regions.

With this in mind, several recommendations were made. First, it was resolved that the Assessment Mapping Manual be given formal recognition as the official guide for the preparation of assessment base maps.

Second, it was discovered that several regions were recording the Instrument Number on the respective parcels plotted on assessment base maps. A recommendation was made that the Instrument Number of all conveyances be recorded on the Assessment Data sheet so that it need not be recorded on the assessment map, and that it be replaced by the roll number on the map.

Confusion has arisen regarding the application of the map numbering system as instructed in the Mapping Manual. As a result, each region uses a unique system of map numbering for filing purposes. It was recommended that a standardized map numbering system based on the roll number be finalized and implemented. In view of recent moves toward the establishment of a land information system (cadastre) and the probability that assessment base maps will be used as the basis of this system, it will be important that map and property identifiers be related to each other so that they can be implemented by a standardized procedure for automated map retrieval purposes.

Future developments in assessment mapping

Two important events will take place in the next several years which will have a strong and direct impact on the assessment mapping program. These are metric conversion and the development of a land information system in Ontario.

Metricalion and assessment mapping

The progress towards metric conversion in Ontario was reviewed at the meeting. One of the biggest impediments to conversion so far has been the lack of a central metric authority which would have the power to choose the most appropriate conversion system, the method of its implementation, and a schedule for metric introduction. Progress has been slow and policies are uncertain. A discussion of several options open to the mapping staff led to a consensus that the Assessment Mapping Program should convert to the metric system as soon as possible, in order to reduce the volume of work in metric conversion. Most regions are still

actively producing base maps; therefore, many areas could be mapped directly in metric measurements. Another impetus for converting in the near future is that under permissive legislation, metric plans of survey will begin to be submitted to the Land Registration System in 1976. For these reasons, it was recommended by the delegates that an Assessment Division Metric Mapping Committee, comprised of three mapping supervisors and one member of the Standards Branch, be established to plan for the orderly and efficient conversion of the Assessment Mapping Program to the metric system.

P.O.L.A.R.I.S. and assessment mapping

Potential changes in Assessment Mapping policies have already been referred to in this article. However, a more comprehensive treatment of the future implications of land registration reform would be useful at this time. At the mapping conference, Mr. Ron Logan of the Legal Surveys Branch, Property Rights Division, Ministry of Consumer and Commercial Relations, spoke to the delegates about the research and development of POLARIS (the Province of Ontario LAnd and Registration Information System). POLARIS is being designed to accommodate the major recommendations of the Law Reform Commission concerning land registration.

The most crucial recommendation to the mapping



△ Joe Valin of the Barrie office chaired the conference session on technical problems, at which a number of resolutions were adopted.

community is the development of a geographical coordinate control system for the location and identification of properties and the affirmation of their boundaries. It was the task of the Survey Project team (one of three teams doing research for POLARIS) to resolve this problem of relating property boundaries on the ground to maps, plans, diagrams and verbal descriptions. The team recommended the following:

- (1) development of an organized series of accurate real property maps;
- (2) confirmation and coordination of boundaries supported by related records of surveys;
- (3) assignment of a geographical identifier to each land parcel, together with a series of cross-referenced identifiers related to local addressing systems; and
- (4) creation of an effective information dissemination system to make the above data readily available to the user public.

It is these recommendations which may have a profound influence on the assessment mapping program in the next several years. Of course, it is impossible to predict the specific effects at this early stage of development. However, if we assume that POLARIS will in fact be implemented and that economies will be practiced throughout its development during this climate of governmental austerity, then we can expect that POLARIS will utilize the existing assessment mapping program as the basis for its real property maps. It will be to the advantage of the Assessment Division to upgrade assessment maps to a common standard in order to facilitate their merger with POLARIS. If assessment maps become an integral part of POLARIS, then the mapping program itself will be important not only for assessment purposes, but in fact will be the vehicle for maintaining the basis of the new land registration system. If, on the other hand, the Assessment Division does not take steps to integrate its mapping program into POLARIS, the assessment mapping function may very well become merely a redundant exercise.

The need for better communication

Mapping supervisors unanimously agreed that better communication among themselves and between the Assessment Standards Branch and themselves is essential if significant improvements in map production, map quality and staff morale are to be achieved. To this end, the reinstatement of the "Mapping Newsletter" was recommended as an excellent method to disseminate information. It was suggested that the "Newsletter" could serve as the vehicle for promoting changes in mapping policy; also, technical papers could be published and new mapping techniques discussed. In addition, the "Newsletter" could be used as a forum for mapping staff members seeking solutions to map-related problems.

A recommendation was passed proposing that the Assessment Standards Branch include mapping sections in regional offices on its distribution list of all information concerning assessment mapping, the POLARIS project, metrication and microfilming. It was further proposed that the "Principles of Assessment Mapping" course be updated



△ Among those attending the opening session were (left to right) mapping supervisors John Vott, Windsor; Brian Harwood, Chatham; and Leon Thomson, Bracebridge; and Lou Stadelmann and Jeanne MacDonald of the Standards Branch.

to reflect the future responsibilities required of mapping personnel, and that a more advanced course be developed to meet the technological needs required by a more sophisticated land parcel mapping system.

Finally, an annual mapping supervisors' meeting should be held in order to bring everyone up-to-date on mapping issues.

Although the implementation of the recommendations made will depend on Divisional policy, the conference was seen as a vital first step in effecting changes in the mapping field. By identifying the key problems and issues in mapping, the assessment mapping staff can begin to prepare for a potentially challenging future.

□

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